DEPARTMENT OF THE ARMY
TRAINING DEVELOPMENTS INSTITUTE
FORT MONROE VIRGINIA 23651

AD A119577

ATTG-DOR   1 September 1982

SUBJECT: Proceedings of the TRADOC/Training Developments Institute,
7th Chiefs of Analysis Seminar, 22-26 March 1982
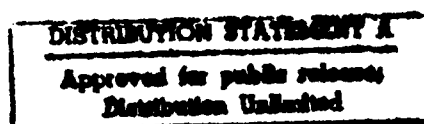
Seminar Attendees

1. Inclosed is a summary of the proceedings of the 7th Chiefs of
Analysis Seminar held 22-26 March 1982. The primary theme of the seminar was
Identifying and Resolving the Problems of Analysis.

2. The summary consists of two elements, an Executive Summary of the
activity, to include a complete list of attendees and participants and
abstracts of presentations with paper copies of slides and supporting
narratives/papers.

3. Additional copies of the proceedings will be available in the near future
through Defense Technical Information Center. Limited copies can be obtained
from this office, ATTN: ATTG-DOR.

1 Incl   MARK T. PILGRIM
as   LTC, AR
                                Acting Director
                                Training Developments Institute

DTIC FILE COPY

DTIC
ELECTE
SEP 2 7 1982
H

DISCLAIMER NOTICE

SECURITY CLASSIFICATION OF THIS PAGE *(When Data Entered)*

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER	2. GOVT ACCESSION NO. AD-A119 577	3. RECIPIENT'S CATALOG NUMBER
4. TITLE *(and Subtitle)* Proceedings of the TRADOC/Training Developments Institute, 7th Chiefs of Analysis Seminar, 22-26 March 1982		5. TYPE OF REPORT & PERIOD COVERED Final
		6. PERFORMING ORG. REPORT NUMBER
7. AUTHOR*(s)* Occupational Research & Analysis Division Staff		8. CONTRACT OR GRANT NUMBER*(s)*
9. PERFORMING ORGANIZATION NAME AND ADDRESS Training Developments Institute ATTN: ATTG-DOR Fort Monroe, VA 23651		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS
11. CONTROLLING OFFICE NAME AND ADDRESS Training Developments Institute ATTN: ATTG-DOR Fort Monroe, VA 23651		12. REPORT DATE 1 September 1982
		13. NUMBER OF PAGES 345
14. MONITORING AGENCY NAME & ADDRESS*(if different from Controlling Office)*		15. SECURITY CLASS. *(of this report)* Unclassified
		15a. DECLASSIFICATION/DOWNGRADING SCHEDULE

16. DISTRIBUTION STATEMENT *(of this Report)*

Approved for public release; distribution unlimited.

17. DISTRIBUTION STATEMENT *(of the abstract entered in Block 20, if different from Report)*

18. SUPPLEMENTARY NOTES

19. KEY WORDS *(Continue on reverse side if necessary and identify by block number)*

Systems Approach to Training (SAT)
Basic Skills Education Program (BSEP)
Job Analysis
Task Analysis
Job Aids

Front End Analysis (FEA)
Soft Skills Analysis

20. ABSTRACT *(Continue on reverse side if necessary and identify by block number)* The proceedings represent the presentations made at the 7th TRADOC/TDI Chiefs of Analysis Seminar held at the Bonhomme Richard Inn, Williamsburg, VA, 22-26 March 1982. The primary theme of this seminar was "Identifying and Resolving the Problems of Analysis." The intent of this seminar was to provide a forum to address training analysis issues, to consider the current state-of-the-art activities within front end analysis/performance technologies, to resolve problems within the TRADOC community attendant to each, and to allow service school Chiefs of Analysis to interact with the ORAD staff (the TRADOC proponent for front end analysis policy and training).

DD *FORM 1473* EDITION OF 1 NOV 65 IS OBSOLETE
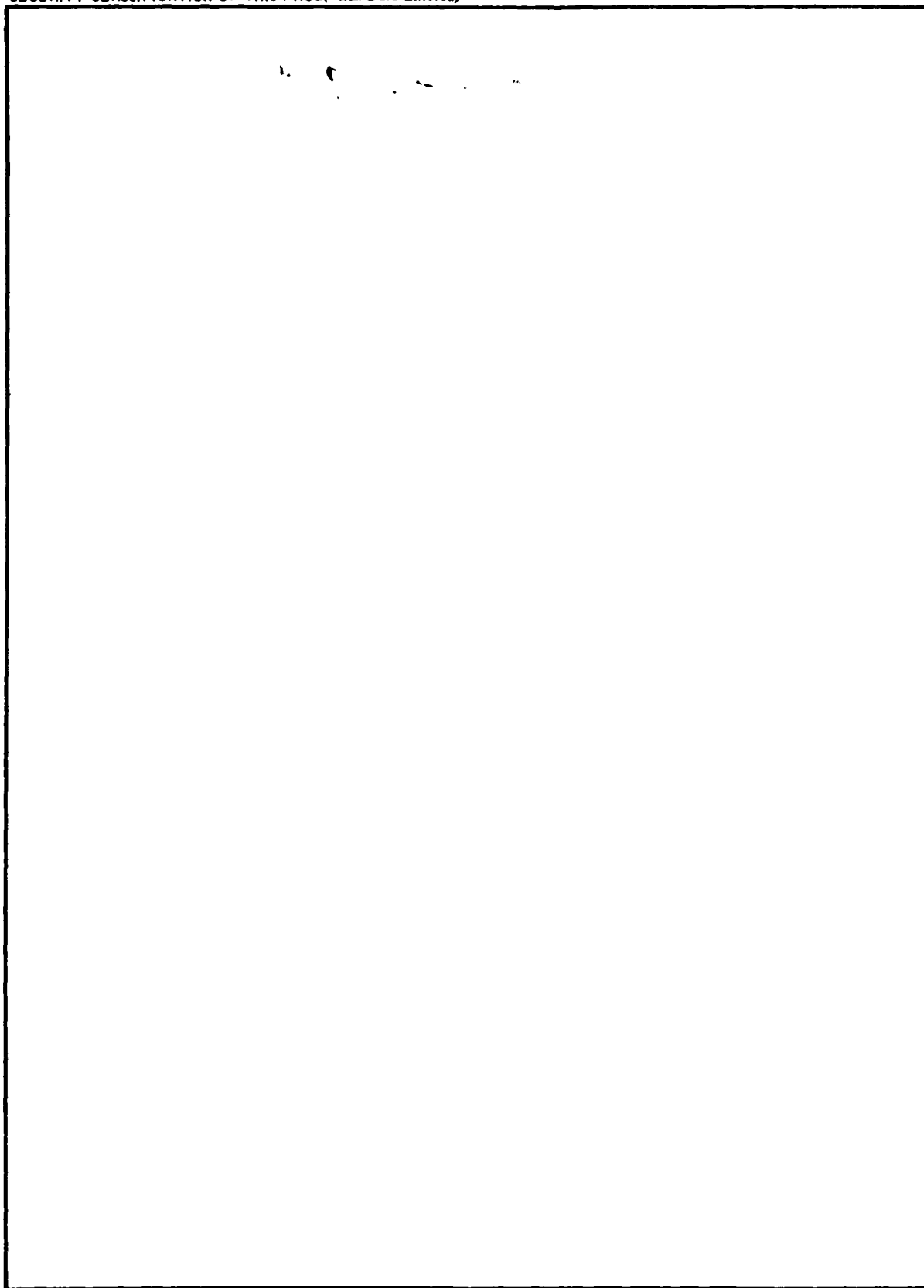
SECURITY CLASSIFICATION OF THIS PAGE *(When Data Entered)*

ATTG-DOR

HQ TRADOC 7TH CHIEFS OF ANALYSIS SEMINAR
22-26 March 1982
Williamsburg, Virginia

1. The 7th Chiefs of Analysis Seminar ו- held at the Bonhomme Richard Inn,
Williamsburg, Virginia, 22-26 March 1982. The theme of this seminar was:
Identifying and Resolving the Problems of Analysis.

2. The sponsor of this seminar was the Occupational Research and Analysis
Division (ORAD), Training Developments Institute (TDI), Fort Monroe, VA
23651. The project officers/seminar coordinators were. 2LT Heard and
MSG Mitchell, telephone (804)727-3607, AUTOVON 680-3607.

3. The purpose of this seminar was to provide a forum to address training
analysis issues, to consider the current state-of-the-art activities within
front end analysis/performance technologies, to resolve problems within the
TRADOC community attendant to each, and to allow service school Chiefs of
Analysis to interact with the ORAD staff (the TRADOC proponent for front end
analysis policy and training).

4. Seminar presentations are summarized herein and copies of vu-graphs, hand-
outs, etc., are provided as inclosures. Unless so indicated, the content of
these presentations do not necessarily reflect official TRADOC views on the
subject. The intent of the seminar was to permit the service schools and
invited speakers to present their opinions on the varied subjects and solicit
feedback to better our analysis efforts.

5. The agenda is attached at Incl 1. A list of attendees is at Incl 2.

6. Executive Summary of the Proceedings.

    a. Newcomer's Orientation. For the first time in the 3-1/2-year history
of the Chiefs of Analysis Seminar, ORAD conducted a Newcomer's Orientation
designed to acquaint newly assigned Chiefs of Analysis and those new to the
seminar with the basics of performance analysis as seen by TDI and TRADOC.
The half day session was attended by approximately 30 personnel representing
most of the service schools and affiliated organizations. After a brief
introduction by LTC Pilgrim, Chief, OR&A Division, and MSG Mitchell, seminar
coordinator, CPT(P) Tarr presented a brief synopsis of the Genesis of Systems
Approach to Training. This session offered a retrospective look at the evolu-
tion of modern training systems from what are now called archaic techniques
through those employed today (see Incl 3). MSG Mitchell followed offering a
limited Army historical perspective of a Systems Approach to Training (SAT)

and expressing the current TRADOC training philosophy concerning model and technology application. In this brief summary he addressed the lifeline of the Interservice Procedures for Instructional Systems Design (IPISD, aka ISD) and TRADOC initial policies versus those of today concerning its implementation. It is always recognized as a viable, even ideal model for a large scale training system but had recently (since Oct 80) become recognized as a cumbersome, time/resource consuming model which the Army could not afford to implement in terms of money, manpower, and/or time delay tolerance. As a result, a more generic approach was born which attempted not to regulate a specific model or methodology but essential outputs and outcomes of the process. This would leave the model selection and process application to the respective schools. He cautioned those who were being exposed to the "jargon" of the trade to attempt not to be intimidated by the language, like any other technology or science, the technicalities of language are initially frightening--until you are familiar with it (see Incl 4). LTC Pilgrim offered an overview of the ORAD mission in order to explain what ORAD could do to help them (the chiefs) do their jobs. He highlighted the areas of research, liaison, policy/guidance, training, protocol, and assistance (see Incl 5). Dr. Longo briefed the attendees on the ORAD role in the Military Occupational Data Bank (MODB) Program administered by the US Army Soldier Support Center, National Capital Region (SSC-NCR), Alexandria, VA. Mr. Worstein, Chief, Occupational Survey Division, SSC-NCR, highlighted the Comprehensive Occupational Data Analysis Programs (CODAP) used by SSC-NCR to record, tabulate, and distribute the MODB data (see Incl 6). Finally, Mr. Silverberg spent a few minutes with the attendees forming a consensus first of what they perceived their jobs to be in the service schools, then after discussion with the attendees, highlighted for them what ORAD could do to assist them in getting their jobs done effectively (see Incl 7).

b. <u>Welcoming/Opening Remarks</u>. COL Nerone, Director, Training Developments Institute, opened the official seminar Tuesday morning by welcoming all attendees and summarizing several of the major TRADOC initiatives for them (excerpt of these remarks is at Incl 8).

c. MSG Mitchell presented the theme of the seminar in a short scenario of the week to come and the goals/objectives ORAD had set for the program. He emphasized that before anyone could address solutions, some time would be spent identifying the problem, then and only then, would solutions be addressed. While these two general areas were on the agenda, an effort would be made to try to show the participants what they could do about resolving the problem (not just the what, but the how) (see Incl 9).

d. In keeping with MSG Mitchell's pledge to identify the problems first, the seminar opened with a session designed to get the service schools to identify (and later prioritize) their problems in implementing an SAT. As the first step of that process, he had participants rate their school toward full implementation of an SAT. They could rate their school from 0 to 100% (see Incl 10 for tally). Consensus indicated that most participants felt that their school had come about 40% of the way toward a total implementation of a systems approach to performance-oriented training. Thus, there was a problem--getting the other 60% on the board. With the assistance of

Dr. Dormant, Dormant and Assoc:ates, Bloomington, IN, MSG Mitchell then used an interactive "Group Grope" to identify the specific problems standing in the way of the mutual goal. The problems were rank ordered (prioritized) to reflect the largest to the smallest. The top five problems, in order were:

      (1) Lack of resource (time and personnel: money was not included).

      (2) Lack of adequate training for trainers, developers, and support personnel.

      (3) Failure of management to accept and support the SAT philosophy.

      (4) System too complex/poorly coordinated at HQ TRADOC.

      (5) Lack of interface (integration/coordination) with DARCOM, HQDA, and combat developers at school level.

(A summary of the session is at Incl 11.)

    e. Dr. Olsen reported on the effort Dr. Dormant and he had undertaken to determine the viability of the current manpower yardstick used by TRADOC Resource Management to allocate personnel authorizations. The Scientific Services Program (SSP) effort concluded in Dec 81 with a finding that the current yardstick was inadequate and that one factor, 3 mandays per task, was the only dominant predictor of time required to analyze whether a task analysis was being done for the first time or being revised. (See Incl 12 for a copy of the final report and the briefing materials. This session was rescheduled for Friday morning.)

    f. The first session in the afternoon was devoted to "Aids in Performance." MSG Mitchell and Mr. Klesch, USATSC, Ft Eustis, divided the session into three parts.

      (1) The first part was used by MSG Mitchell to define an aid of performace (or Job Aid) in a generic sense. It was defined as something which: (1) was used in the actual job situation; (2) provided some signal of when to take action; (3) gives directions on what to do; and (4) reduces length of recall time. It is not a: (1) training aid; (2) verbal order; (3) tool; or (4) programed instruction text or similar instrument. The purpose, advantages/ disadvantages, and basic rules of job aid utility were also presented at that time.

      (2) Mr. Klesch followed with a presentation of the Army's Skill Performance Aids (SPAS) Program. In this session he indicated that the SPAS Program was designed only to aid performance on equipment directly related to a soldier task, e.g., those dealing with operation, troubleshooting, repair, etc. The SPAS Program implementation, via use of Technical Manuals (TM), was discussed in sufficient detail so all could understand the basic concepts of how to maximize the effectiveness of their roles via the SPAS Program.

(3) In part three, MSG Mitchell gave the attendees some ideas on how they could go about getting Job Aids (including SPAS) into use throughout the Army, thereby reducing their own workloads in the development process. It was suggested that DA Pamphlets and DA Labels are two excellent devices to accomplish that objective (see Incl 13 and 14).

g. Mr. Larsen, Performance Management Division, TDI, offered a presentation entitled, "PMD Update," which reported on their progress in getting TRADOC Systems Managers (TSM) into the mainstream of a performance-oriented, SAT, and other initiatives in that section of TDI (see Incl 15).

h. Dr. Duncan, Staff and Faculty Training Division (SFTD), TDI, concluded the first full day of the seminar with a look at the "training the trainer" aspects of the TDI mission. Innovations in the Middle Manager Course (on the drawing board) as well as updates to the Senior Manager Course were discussed (see Incl 16).

'. Wednesday morning was devoted entirely to presentations on Change Agentry by Dr. Dormant and MSG Mitchell. The topic was introduced as a method for effecting the attitudinal change so badly needed in the command in order to close the gap between current level and full implementation of an SAT. Dr. Dormant explained in detail the particulars of the ABCD Model (Adopters, Blackbox, Change Agent, Domain) to effect change. MSG Mitchell tied the various generic Change Agentry points made to real world, TRADOC situations. The morning session concluded with Dr. Dormant offering views on difficulty in being a change agent, suggesting one should have a "strong constitution and/or a lot of help." The first session of the afternoon offered all participants a chance to find out where that help might come from as they asked the group to divide into small groups and role play the TDI staff as well as their own school staff and faculty to see how they could help each other meet mutual goals (and thus effect change) (see Incl 17).

j. LTC Raymond and MAJ Terwilliger, SFTD, TDI, updated the participants on the Training Development Officer Program within the Army. It was noted that the current direction was pointed toward establishing an Operations and Training Officer Specialty with an ASI to designate the Training Development Officer (also to distinguish him from the Operations and/or Combat Developments Officer) (see Incl 18).

k. The final presentation of the afternoon was made by Canadian CPT Bitten, Canadian Forces Training Centre, Bordon. Ontario, who had been especially invited to advise the attendees of our allies "success story with warts" in getting their Training Development Officer (TDO) Specialty and Course off the ground and into the field. At the time of the presentation, the first class of TDO was nearing completion of the 5-week program which resulted in award of a TDO specialty and assignment in a training position.

l. Thursday morning found the agenda devoted to Mr. Lineberry, President, Performance Design Corporation, McLean, VA and MSG Mitchell covering an analysis technique called paradigming. The audience was first provided a look into

4

the various levels of performance in order to insure they could pardigm at the operant level (the lowest meaningful level of performance consisting of one cue/stimulus and one step/response). Army specific examples were integrated into the presentation to facilitate transfer. The session concluded with several specific examples on how one could employ the principles of paradigming in order to analyze "soft skills." (see Incl 19).

m. The last hour before lunch was spent reviewing the Extended Task Analysis Procedures (ETAP) which TDI developed via SSP contract in 1980-1981. CPT(P) Tarr spent a little time reviewing the basic model as well as updating the audience on its utility evidenced in use with the Basic Skills Education Program (BSEP) Pilot Program (see Incl 20).

n. The early afternoon was directed to talks by CPT(P) Tarr and Dr. Winner reporting on a current SSP contract aimed at identifying various models for analyzing soft skills and, if appropriate, design of an Army specific model which would accomplish Army specific goals.

o. Ms. Frost, McDonnell-Douglas Aircraft Corporation, was the next invited speaker. Ms. Frost advised attendees of efforts to analyze, design, and develop pilot training with the assistance of the computer. She was able to detail the various steps employed in model application and explain the viability of each (see Incl 21).

p. Dr. Lubin and Mr. McCormack of Interactive Training Systems, Inc., Cambridge, MA, then demonstrated the usage of their system currently being tested with the Army Organizational Effectiveness and other military schools. The system is designed to employ television delivery media in order to teach both "hard" and "soft" skill performance (see their brochure at Incl 22).

q. Dr. Reigeluth, Syracuse University, concluded the regular afternoon session with a report on his efforts under BSEP SSP to find a creditable Army relevant model for design and development of materials output from the BSEP Pilot Program (see Incl 23).

r. Conferees were then released for the day but advised that Dr. Winner (see 6n above) and Dr. Reigeluth would host discussion groups in adjacent rooms in order to acquire TRADOC feedback on their projects. Approximately 20 participants turned out for the two sessions and provided meaningful data to the contractors.

s. Friday morning began with MAJ Brown, British Liaison Officer to TDI, reporting on the status of the long awaited TRADOC Regulation 350-7, A Systems Approach to Training (this was a change to the agenda as published). MAJ Brown advised participants that it had been a long, uphill struggle beginning in Oct 80 to get the regulation to the point where it currently is--final school staffing as a draft TRADOC Regulation (see Incl 24).

t. MSG Mitchell rendered a report for Mr. Lineberry on the recently concluded SSP contract to assess the corporate training needs of TRADOC senior

5

management and development of appropriate remediation. The project resulted in a series of recommendations for alleviating significant shortcomings to performance (to be published under separate cover) and an Executive Desk Reference for Analysis and a Systems Approach to Training to serve as a job aid to be used by Department Directors, Assistant Commandants, and Commandants at the service schools.

u. MSG Mitchell briefly reported on the completed efforts of ORAD-TDI to enhance the working skills/knowledges of senior management through an Army Training Executive Workshop developed and delivered by Dr. Harless, President, Harless Performance Guild, Inc. The workshop, delivered first in Oct 81, again in Feb 82, was a restructured 3-day session originally employed with AT&T and other large corporations to acquaint their managers with performance-oriented training. Dr. Harless and MSG Mitchell had worked together to "paint the workshop Army-green" with relevant examples, exercises, etc. The results of the sessions, delivered to nearly 60 senior 05, 06, and 07, were that it was well received, beneficial, and recommended for continuation either via incorporation into the existing Senior Managers Course or as an independent entity.

v. Mr. Frank Giunti, Chief, Instructional Development Division, TDI, offered a brief presentation on current events in their office, including interactive video projects. Mr. Giunti introduced LTC Morris from the Army Communicative Technology Office who demonstrated one application of interactive video within the Army (see Incl 25). Mr. Giunti discussed a broad range of applications of modern technology to training (see Incl 26).

w. As a closing segment, MSG Mitchell brought back the list of the most salient problems facing the Chiefs of Analysis at this time. Each was discussed once again with an eye to what had been done in the seminar to address each and what possible solutions had come to light as a result of the sessions. The five most significant problems (see para 6d) were specifically addressed. Participants agreed that they were now better armed to deal with these issues and could begin to do so on return to their home stations.

x. LTC Pilgrim made closing remarks and thanked all for their participation.

27 Incl
1-26 as
27. Seminar handout

MARK T. PILGRIM
LTC, AR
Acting Director
Training Developments Institute

6

A G E N D A

SEVENTH CHIEFS OF ANALYSIS SEMINAR

WILLIAMSBURG, VA

22-26 MARCH 1982

THEME: IDENTIFYING AND RESOLVING THE PROBLEMS OF ANALYSIS

CONDUCTED BY THE OCCUPATIONAL RESEARCH AND ANALYSIS DIVISION
US ARMY TRAINING DEVELOPMENTS INSTITUTE
FORT MONROE, VA 23651

INCL 1

MONDAY

WHEN	WHAT	WHERE	WHO
1000-1700	Registration	Conference Foyer	LT V. Heard Ms. Joni Saunders
1300-1700	Newcomer's Orientation	Serapis Room	LTC M. T. Pilgrim MSG Don Mitchell

TOPICS:

- Genesis of Systems Approach to Training

- (Criterion Referenced Instruction/   CPT(P) Ron Tarr
  Performance Oriented Training)

- TRADOC Philosophy: A Systems   MSG Don Mitchell
  Approach to Training (SAT)

- ORAD Mission: What we can do to   LTC M. T. Pilgrim
  help you.   CPT(P) Ron Tarr
  ~~2LT V. Heard~~
  Dr. Alex Longo
  Mr. B. Silverberg

- Chiefs of Analysis Job: What you   Mr. B. Silverberg
  are and oughta be doing.

| 1700-1830 | No Host Reception | Lounge | Everyone |

TUESDAY

WHEN	WHAT	WHERE	WHO
0700-0800	Registration	Conference Foyer	LT V. Heard Ms. Joni Saunders
0800	Opening Remarks/ Theme Presentation	Fleet Room	COL F. A. Nerone MSG Don Mitchell
0815-1100	Identifying (and prioritizing) our mutual problems via a "GROUP GROPE"	"	Dr. Diane Dormant, Independant Consultant MSG Don Mitchell
0915-0945	Coffee Break		
1100-1145 TO	SAT: It's alive and well (an update)	"	Crabne MAJ Graham Brown, SFTD (British Exchange Officer)
1145-1300	Lunch		
1300-1415	Aids to Performance: With and Without Instruction (Incl Update on SPAS)	"	MSG Don Mitchell Mr. John Klesch USATSC
1415-1430	Break		Larson
1430-1515	Performance Management Division Update • TEA • CD Plans for TSM • Other initiatives	"	Mr. James Lawson
1515-1630	Staff & Faculty Update: • Training Developer Training • The Middle Manager Course • The Senior Manager Course • New Ideas -- A Look into the Future	"	LTC Dan Raymond Dr. Steve Duncan

WEDNESDAY

WHEN	WHAT	WHERE	WHO
0800-1145	Making SAT Work: Using Change Agentry	Fleet Room	Dr. Diane Dormant MSG Don Mitchell
	• How far is your school?		
	• Are you a change agent?		
	• Where's TRADOC on the change continuum?		
	• A Day in the Life of ... (a Change Agent)		
0945-1000	Break		
1145-1300	Lunch		
1300-1415	A Change Agent Needs Help		Dr. Diane Dormant
1415-1430	Break		
1430-1515	Status of the Training Development Officer Specialty Code	"	LTC Dan Raymond MAJ G. Terwilliger
1515-1615	The Canadian Forces TDO Programs; A Success Story with Warts!	"	CPT Mike Bitten, Canadian Forces Training Development Centre

THURSDAY

WHEN	WHAT	WHERE	WHO
0800-1115	Analyzing at the Operant Level: Finding Cues as Well as Steps	Fleet Room	Mr. C. S. Lineberry, Perf Design Corp. MSG Don Mitchell

- Analyzing Performance

- Levels of Performance

- Describing Performance

- Helpful Tools

- Intro to "Paradigming"

- Charting "Soft Skills"

WHEN	WHAT	WHERE	WHO
0900-0920	Coffee Break		
1115-1200	ETAP: Improvements and Advancements	"	CPT(P) Ron Tarr
1200-1300	Lunch		
1300-1345	A Contract to Solve the "Soft Skill" Documentation Dilemma	"	Dr. Janet Winner Independant Consultant CPT(P) Ron Tarr
1345-1445	A CAI Strategy for Training Complex Cognitive Tasks	"	Ms. Jana Frost McDonnell-Douglas Aircraft Corp
1445-1500	Break		
1500-1600	Using Interactive Video to Train the "Soft" Tasks	"	Dr. David Lubin Mr. Steve McCormack, Interactive Training Systems, Inc.
1600-1630	Report on an SSP Addressing Design and Development	"	Dr. Charles Reigeluth Syracuse Univ.
1900-?	Your Ideas/Input into the the SSP's (VOLUNTEER WORK SESSION)	"	Dr. Janet Winner Dr. Charles Reigeluth CPT(P) Ron Tarr

FRIDAY

WHEN	WHAT	WHERE	WHO
0800-0845	An Update on Updating the Analysis "Yardstick"	Fleet Room	Dr. John Olsen TRANEX, Inc.
0845-0915	The Executive Desk Reference for Analysis and Training	"	Mr. C. S. Lineberry
0915-0930	Results of our Army Training Executive Pilot Workshop	"	MSG Don Mitchell
0930-0945	Break		
0945-1045	Some Innovations in Delivery Systems	"	Mr. Frank Giunti IDD, TDI
1045-1130	Wrap-up: A Report Card	"	MSG Don Mitchell
1130-1145	Closing Remarks	"	LTC M. T. Pilgrim COL F. A. Nerone

(handwritten: To 1145, 1100-1145)

HAVE A SAFE AND ENJOYABLE JOURNEY HOME!

A THOUGHT FOR CONTEMPLATION:

" ... it is useless to complain that the advanced problems haven"t been solved while one is still screwing up the fundamentals".

(Bob Mager, Measuring Instructional Intent (Or Got a Match?), Copyright 1973)

ATTENDEES
SEVENTH CHIEFS OF ANALYSIS SEMINAR
22-26 March 1982

ATTENDEE	POSITION TITLE	OFFICE SYMBOL	AUTOVON

AIR DEFENSE--FORT BLISS, TX

ATTENDEE	POSITION TITLE	OFFICE SYMBOL	AUTOVON
CPT Benjamin L. Bradley	Chief, Analysis Branch	ATSA-TDI-Q	978-3441
Mr. John E. Buckley	Education Specialist	ATSA-TDD	978-5003/3617/5522
Mr. Curtis L. Holmes	Education Specialist	ATSA-TDI-Q	978-4930
Mr. Leman L. Lucas	Training Specialist	ATSA-TDI-PA	978-3840

ACADEMY OF HEALTH SCIENCES--FORT SAM HOUSTON, TX

Mr. Kenneth D. Finstuen	Occupational Analyst	HSA-TDE	471-5949
Mr. William P. Lesjak	Education Specialist	HSA-TDI	471-2226

ARMOR--FORT KNOX, KY

Mr. John H. Werkman	Education Specialist	ATZK-TD	464-6154

AVIATION--FORT RUCKER, AL

Mr. Edward A. Ewell	C, Staff & Faculty Development Division	ATZQ-TD-SF	558-3793/6420
LTC Marvin E. McGraw	C, Training Analysis & Design Division		558-5412
CPT Paul C. Walker	Training Development Officer	ATZQ-TD-ACMT	558-6703/6704

COMBINED ARMS CENTER, CATRADA--FORT LEAVENWORTH, KS

MAJ Robert H. Behncke	PDD	ATZL-TOP-D	552-2924
MAJ Jon M. Millner	PDD	ATZL-TOP-D	552-2924

COMMAND AND GENERAL STAFF COLLEGE--FORT LEAVENWORTH, KS

SGM Pedro Bella	SGM Leadership Group	ATZL-SWC-P	552-2127

INCL 2

CHAPLAIN—FORT MONMOUTH, NJ

ATTENDEE	POSITION TITLE	OFFICE SYMBOL	AUTOVON
CHAP (MAJ) James W. Daniels	Chaplain	ATSC-TD-ED	992-5635

CHEMICAL—FORT McCLELLAN, AL

ATTENDEE	POSITION TITLE	OFFICE SYMBOL	AUTOVON
CPT Reece C. Edmonds	C, Analysis Branch	ATZN-CM-DI	869-3874/4821
Mr. Roy D. Williams	Supervisory Education Specialist	ATZN-CM-DU	869-4779/4288

DEFENSE INFORMATION SCHOOL—FORT BENJAMIN HARRISON, IN

ATTENDEE	POSITION TITLE	OFFICE SYMBOL	AUTOVON
CPT David R. Haskett	Training Developments Officer	ATSX-DTD	699-3160

DEFENSE LANGUAGE INSTITUTE—FOREIGN LANGUAGE CENTER—PRESIDIO OF MONTEREY, CA

ATTENDEE	POSITION TITLE	OFFICE SYMBOL	AUTOVON
MAJ Lloyd R. Brimhall	Deputy Chief, Analysis & Design Branch	ATFL-TD-ADD	929-8679
Dr. Paul H. Madarasz	Chief, Analysis & Design Branch	ATFL-TD-ADD	929-8301/8679

ENGINEER—FORT BELVOIR, VA

ATTENDEE	POSITION TITLE	OFFICE SYMBOL	AUTOVON
MAJ Arthur R. Knobeloch	Chief, Quality Assurance	ATZA-TDI-S	354-6051
Mr. Leon R. Marshall	Chief, Prog Mgmt Office	ATZA-TDP	354-6631
Ms. Donita McGeary	Education Specialist	ATZA-TDI-C	354-5263

FIELD ARTILLERY—FORT SILL, OK

ATTENDEE	POSITION TITLE	OFFICE SYMBOL	AUTOVON
Mr. Taft Joseph	Supervisory Training Specialist	ATSF-TD-TA	639-3092/3300

INFANTRY—FORT BENNING, GA

ATTENDEE	POSITION TITLE	OFFICE SYMBOL	AUTOVON
CPT Patrick D. Flanagan	C, Enlisted Analysis Branch	ATSH-I-V-ED	835-3022
Mr. Alex E. Williams	Education Specialist	ATSH-I-V-ED	835-4110

INSTITUTE FOR MILITARY ASSISTANCE--FORT BRAGG, NC

ATTENDEE	POSITION TITLE	OFFICE SYMBOL	AUTOVON
Ms. Maria M. Bailey	Education Specialist	ATSU-TD	236-3798
Mr. Grady C. Harris	Education Specialist		236-1208

INSTITUTE OF PERSONNEL & RESOURCE MANAGEMENT--FORT BENJAMIN HARRISON, IN

ATTENDEE	POSITION TITLE	OFFICE SYMBOL	AUTOVON
MAJ John G. Giffin	Chief, Personnel & Administration Branch	ATZI-TD-O	699-2717/2939
Mr. Robert N. Johnson	Deputy Director, Training Developments	ATZI-DTD	699-4336/4337

INTELLIGENCE--FORT DEVENS, MA

ATTENDEE	POSITION TITLE	OFFICE SYMBOL	AUTOVON
Dr. William D. Dannenmaier	Education Specialist	ATSIE-TD	256-3780
Mr. Bernard J. Foley	Deputy Director, Training Developments	ATSIE-TD	256-3316/2514

INTELLIGENCE--FORT HUACHUCA, AZ

ATTENDEE	POSITION TITLE	OFFICE SYMBOL	AUTOVON
CPT James A. Flesher	Project Officer	ATSI-TD-OTR	879-3244/5406

THE JUDGE ADVOCATE GENERAL'S SCHOOL--CHARLOTTESVILLE, VA

ATTENDEE	POSITION TITLE	OFFICE SYMBOL	AUTOVON
MAJ Michael A. Haas	Chief, Nonresident Instruction	JAGS-DD	FTS 7-8-938-1206

LOGISTICS CENTER--FORT LEE, VA

ATTENDEE	POSITION TITLE	OFFICE SYMBOL	AUTOVON
Dr. William W. Greer		DRXMC-LS	687-4335

MILITARY POLICE--FORT McCLELLAN, AL

ATTENDEE	POSITION TITLE	OFFICE SYMBOL	AUTOVON
Mr. Fred H. Casey	Education Specialist	ATZN-MP-TD	865-3717

MISSILE & MUNITIONS--REDSTONE ARSENAL, AL

ATTENDEE	POSITION TITLE	OFFICE SYMBOL	AUTOVON
Mr. George G. Benzenhafer	Deputy Chief, Professional Development Div	ATSK-TDP	746-4221
Mr. John W. Talley	Supervisory Education Specialist	ATSK-TDA-A	746-5570

ORDNANCE--ABERDEEN PROVING GROUND, MD

ATTENDEE	POSITION TITLE	OFFICE SYMBOL	AUTOVON
Dr. Mahima R. Kundu	Education Specialist	ATSL-TD-PMQ	283-5471/2017
Mr. Cloyd A. Senn	C, Program Design & Development Division	ATSL-TD	283-2255

ORGANIZATION EFFECTIVENESS--FORT ORD, CA

CPT Allen L. Roach	Chief, Training Analysis Division	AFTZ-TD	929-6014/7058

QUARTERMASTER--FORT LEE, VA

Ms. Janet A. Askew	Education Specialist	ATSM-TDP	687-4441
Ms. Betty L. Slaughter	Supervisory Education Specialist	ATSM-TDS-UP	687-4161/1985

ELEMENT SCHOOL OF MUSIC--LITTLE CREEK, NORFOLK, VA

SFC(P) Paul L. Bordonaro	Project NCO	ATTG-SM-DTD	927-9361
MSG Garry A. Burk	Chief, Tng Analysis, Dev & Des Div	ATTG-SM-DTD	927-9361
SFC George F. Pond	Analyst	ATTG-SM-DTD	927-9361
SP6 John H. Winsor	Project NCO	ATTG-SM-DTD	927-9361

SIGNAL--FORT GORDON, GA

LTC Roy J. Barrios	Chief, New Equipment Analysis Division	ATZH-TDE	780-2280
Mr. Reese P. Herron	Chief, Design & Development Division	ATZH-TDI	780-2223
Mr. Jack R. Redmon	Supervisory Education Specialist	ATZH-TDO-A	780-3417/4895
MAJ Cleveland M. Rowley	Chief, Training Analysis Division	ATZH-TD	780-2005
Mr. William J. York	Supervisory Education Specialist	ATZH-TD-A	780-2973

SERGEANT'S MAJOR ACADEMY--FORT BLISS, TX

CPT(P) John C. Vanderlaan	C, ITAD	ATSS-TD-ITAD	978-8011/8274

SOLDIER SUPPORT CENTER—FORT BENJAMIN HARRISON, IN

ATTENDEE	POSITION TITLE	OFFICE SYMBOL	AUTOVON
Mr. John B. Brady	Chief, Quality Control	ATZI-TD-E	699-2734/4244

SOLDIER SUPPORT CENTER—NATIONAL CAPITOL REGION—ALEXANDRIA, VA

Ms. Sandra L. Forrester	Occupational Analyst	ATZI-NCR-MS	221-0582/0580
Mr. Darrell A. Worstine	Supervisory Occupational Analyst	ATZI-NCR-MS	221-9560/3715

TRANSPORTATION SCHOOL—FORT EUSTIS, VA

Mrs. Brenda B. Dawson	Education Specialist	ATSP-DAC-ET	927-3561
LTC James W. Dilg	Chief, Professional Development Division	ATSP-TD-PDD	927-3367
Ms. Sarah J. Meiring	Education Specialist	ATSP-DAC-ET	927-3651
Mr. Gary Smith	Education Specialist	ATSP-DAC-ET	927-3561
Ms. Rose Marie Taylor	Education Specialist	ATSP-DAC-ET	927-3561
Mr. Richard W. VanDeren	Education Specialist	ATSP-TD-S	927-2668
Mr. Aggie Vassos	Education Specialist	ATSP-TD-AT	927-2007/3172

SCHOOL/ORGANIZATION	ATTENDEES	OFFICE SYMBOL/ADDRESS	TELEPHONE
Others			
Guests	CPT Michael K. Bitten	Ontario, Canada	
	Dr. Diane Dormant	Bloomington, IN	
	Ms. Jana L. Frost	St Louis, MO	
	Mr. Claude S. Lineberry	St Louis, MO	COMM 617/492-1848
	Dr. David Lubin	Boston, MA	
	Mr. Steve McCormack	Boston, MA	
	Mr. John R. Olsen	Pensacola, FL	COMM 904/476-7449
IG	MAJ Benjamin P. Gililo	HQ TRADOC, Ft Monroe	AUTOVON 680-3042
TDI	COL F. A. Nerone	ATTG-D, Ft Monroe	AUTOVON 680-2281
	LTC Mark T. Pilgrim	ATTG-DOR, Ft Monroe	AUTOVON 680-3607
	LT Virginia Heard	ATTG-DOR, Ft Monroe	AUTOVON 680-3607
	Dr. Alexander Longo	ATTG-DOR, Ft Monroe	AUTOVON 680-3607
	CPT(P) Ron Tarr	ATTG-DOR, Ft Monroe	AUTOVON 680-3607
	MSG Don Mitchell	ATTG-DOR, Ft Monroe	AUTOVON 680-4425
	Mr. Bernie Silverberg	ATTG-DOR, Ft Monroe	AUTOVON 680-4425
	Mr. Donald E. Forsyth	ATTG-DID, Ft Monroe	AUTOVON 680-2667/2578

GENISIS: SAT

"IN THE BEGINNING, THERE WAS ONLY DARKNESS..."

IF WE REPLACE DARKNESS WITH INTUITIVE OR NON-SYSTEMATIC ACTIONS THEN THIS COULD BE THE GENISIS FOR SYSTEMS APPROACH. THE CONCEPT IS NOT NEW BY ANY STANDARDS, BUT IS MERELY AN APPLICATION OF GENERAL SYSTEMS THEORY TO NON-HARDWARE SYSTEMS.

```
+---------+     +---------+     +---------+
|  INPUT  |-----| PROCESS |-----| OUTPUT  |
+---------+     +---------+     +---------+
```

INCL 3
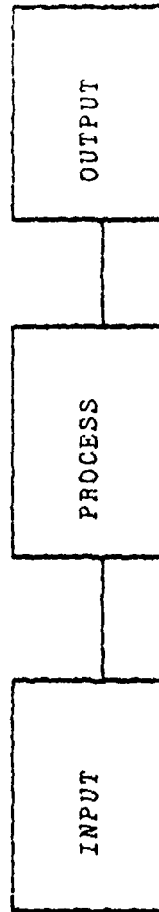
A LITTLE HISTORY

JOHN DEWEY DEVELOPED A FIVE STEP PROBLEM SOLVING MODEL IN 1848

HENRY FORDS CONCEPTS OF ASSEMBLY LINE AND PRODUCTION

"WHIZ KIDS" PLANNING OF THE INVANSION OF FRANCE 1942

MORE HISTORY

THE SIGNIFICANCE OF THE "WHIZ KIDS" ACTIVITIES ARE THAT THEY WERE

REALLY THE FIRST MODERN APPLICATION OF SYSTEMS THEORY TO A

NON-HARDWARE SIT ATION. THE CONCEPT OF COMPREHENSIVELY EXAMINED

INPUT BEING PROCESSED SOMEHOW TO ACHIEVE A PREDICATABLE OUTPUT.

THE NEXT STEP WAS HAPPENING IN A VERY DIFFERENT PLACE, HARVARD.

S----R & RATS

SOMETIME LATER A MAN NAMED SKINNER CAME UP WITH THE IDEA THAT
THERE WAS SOME RESEARCH BASIS FOR APPLYING SYSTEMS THEORY TO
PSYCHOLOGICAL LEARNING THEORY: STIMULUS - RESPONSE IN HIS TERMS.

VIOLA: PROGRAMMED INSTRUCTION IS BORN.

PRIOR TO THIS EDUCATION WAS (AND STILL MAY BE) CONTENT OR SUBJECT
MATTER ORIENTED. THE PRESENTATION OF LARGE BODIES OF FACTS.
PROGRAMMED INSTRUCTION BROUGHT RESEARCH PSYCHOLOGISTS INTO THE
WORLD OF BUSINESS BECAUSE OF THE REWARDS THAT APPEARED THERE.

PROGRAMMED INSTRUCTION

AN EMPIRICAL BASED PROCESS THAT IDENTIFIED OBJECTIVES OR FRAMES

THAT REQUIRED SPECIFIC BEHAVIOR. THIS COULD THEN BE USED AS A

MEASURE OF HOW WELL THE INSTRUCTION EFFECT THE STUDENT AND COUl [

BE REVISED UNTIL MASTERY WAS ACHIEVED. EVIDENCE COULD BE GATHER .

AND THE RESULTS COMPARED TO THE DESIRED OUTCOMES. THIS WAS VERY

STILL FACT AND RULES ORIENTED, BUT IT WAS A SYSTEM.

PERFORMANCE TECHNOLOGY

PROGRAMMED INSTRUCTION PER SE WAS NOT VERY SUCCESSFUL ALTHOUGH IT IS STILL AROUND. IT DID SERVE TO BRING MANY RESEARCH ORIENTED FOLKS INTO THE APPLIED FIELD OF LEARNING AND INSTRUCTION. THIS RESULTED IN THE BIRTH AND GROWTH OF PERFORMANCE TECHNOLOGY OR EDUCATIONAL TECHNOLOGY. AS PI USED TEACHING MACHINES, SO ED TECH GREW OUT OF THE MEDIA CENTERS AROUND THE COUNTRY.

MANY MODELS AND APPROACHES

SINCE THIS TIME THERE HAS BEEN AN EXPLOSION OF MODELS, MANY YOU

MAY BE AWARE OF OR EVEN USED.

JCA

HARLESS   IMD

                                        SAG?

IPISD

CRI

      IPI

THE SAME OR DIFFERENT

DESPITE THE VAST NUMBER AND DIFFERENCES THEY HAVE TWO COMMON AREAS

    o NONE OF THEM WILL DO EVERYTHING ALL THE TIME

    o THEY ALL FIT UNDER THE UMBRELLA OF SYSTEMS APPROACH

CONTROL

THE BIG DIFFERENCE IN MODERN SYSTEMS APPROACH AND DEWEYS MODEL IS

THE ADDITION OF THE CYBERNETIC FUNCTION OF CONTROL.
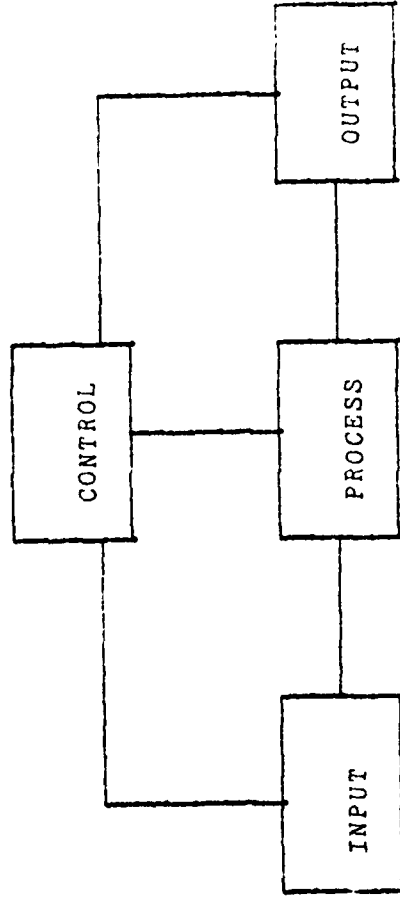
IN WHICH CONTROL COMPARES INPUT TO OUTPUT AND ADJUSTS AS REQUIRED

SYSTEMS APPROACH TO TRAINING

TIED TO A GENERIC TRAINING SYSTEM IT LOOKS LIKE THIS

EVALUATION

```
        CONTROL
          │
       REVISION
          │
INPUT ── PROCESS ── OUTPUT
```

INPUT
ANALYSIS
& STUDENTS

PROCESS
DESIGN
DEVELOPMENT
IMPLEMENTATION

OUTPUT
GRADUATES

SYSTEMS APPROACH TO TRAINING (SAT) MODEL

External Evaluation

ANALYZE
DESIGN
DEVELOP
IMPLEMENT

Internal Evaluation

External Evaluation

THE ANALYSIS MODEL

INITIATING
CUES/SIGNALS ➤ **NEEDS ASSESSMENT**

Non-Training Need

General Training Need → **NEEDS ANALYSIS**

Specific Training Need

Refer to Appropriate Action Office

JOB PERFORMANCE ANALYSIS

Collective Job Tasks

Individual Job Tasks

CRITICAL TASK IDENTIFICATION

Critical Tasks Training

CRITICAL TASK ANALYSIS

Task Performance Specifications

Job Performance Aid Specifications

Task Performance Measures

OCCUPATIONAL RESEARCH AND ANALYSIS DIVISION

(OR&AD)

MISSION AND FUNCTION

DEVELOP, SUPPORT, AND ACT AS TRADOC STAFF PROPONENT FOR THE
ANALYSIS PHASE OF THE SYSTEMS APPROACH TO TRAINING BY:
CONDUCTING RESEARCH; MAINTAINING LIAISON AND INTERFACE WITH
PUBLIC AND PRIVATE AGENCIES INVOLVED IN OCCUPATION AND TRAINING
ANALYSIS; DEVELOPMENT AND PROMULGATION OF POLICY, GUIDANCE, AND
SUPPORTING TRAINING OR PROTOCOL MATERIALS.

DEVELOP AN ARMY SPECIFIC, FUNCTIONAL BASIS SKILLS EDUCATION
(BSEP) CURRICULUM FOR THE ARMY CONTINUING EDUCATION SYSTEM (ACES)

INCL 5

PRESENT ACTIVITIES

RESEARCH:

ANALYSIS AUTOMATION

FEA SELECTION MODEL

TASK PERFORMANCE SPECIFICATION MODEL

MOBILIZATION TASK SELECTION MODEL

DESIGN AND MOTIVATION MODELS FOR BSEP

ANALYSIS MANPOWER REQUIREMENTS

EXECUTIVE TRAINING NEEDS

STUDENT TRAINING SUCCESS PREDICTION FORMULA

SOFT SKILLS MATRIX

LIAISON:

VOCATIONAL TECHNICAL CONSORTIUM OF STATES (VTECS),

INTERSERVICE TRAINING REVIEW ORGANIZATION (ITRO)

NATIONAL SOCIETY OF PERFORMANCE INSTRUCTION (NSPI)

AMERICAN SOCIETY FOR TRAINING DEVELOPMENTS (ASTD)

AIR FORCE HUMAN RESEARCH LABORATORY (AFHRL)

NAVY PERSONNEL RESEARCH AND DEVELOPMENT CENTER (NPRDC)

ALMC - DARCOM

CAC

ARMY RESEARCH INSTITUTE (ARI)

ARMY TRAINING SUPPORT CENTER (ATSC)

SOLDIER SUPPORT CENTER - NATIONAL CAPITOL REGION (SSC-NCR)

TRADOC IG

DCST

POLICY/GUIDANCE:

TRADOC REGULATION 350-2 - DEVELOPMENT OF INDIVIDUAL TRAINING

TRADOC REGULATION 351-4 - JOB AND TASK ANALYSIS

TRADOC CIRCULAR 350-3 - GLOSSARY (EXPIRED)

TRADOC SUPPLEMENT 1 TO AR G11-3 - AOSP

CHIEFS OF ANALYSIS SEMINAR

TRADOC EVALUATIONS

ITPP REVIEW

TRAINING/PROTOCOL/ASSISTANCE:

SENIOR MANAGER FEA MODULES

EXECUTIVE DESK REFERENCE FOR ANALYSIS AND SAI

FEA MODULES FOR TRADOC PAMPHLET 351-4(T)

TRADOC PAMPHLET 351-6

INTERVIEWING FOR ANALYSIS: SELF INSTRUCTIONAL TEXT

EXTENDED TASK ANALYSIS USERS HANDBOOK AND MODULES

TRADOC FORM 550

STAFF ASSISTANCE VISITS

CONTRACTING FOR ANALYSIS TRAINING

BSEP CURRICULA DEVELOPMENT

CONTACT OFFICERS

SSC-NCR

DEPUTY
COMMANDER

PROPONENCY
COORDINATION
CENTER

SOLDIER
DEVELOPMENT
DIRECTORATE

PERSONNEL
RESOURCES
ANALYSIS
DIRECTORATE

MILITARY
OCCUPATIONAL
DEVELOPMENT
DIRECTORATE

MILITARY OCCUPATIONAL DEVELOPMENT DIRECTORATE

DIRECTOR

OCCUPATIONAL SURVEY DIVISION

AR 611-3

AR 611-5

ATTITUDE AND OPINION SURVEY DIVISION

AR 600-46

MOS STRUCTURES DIVISION
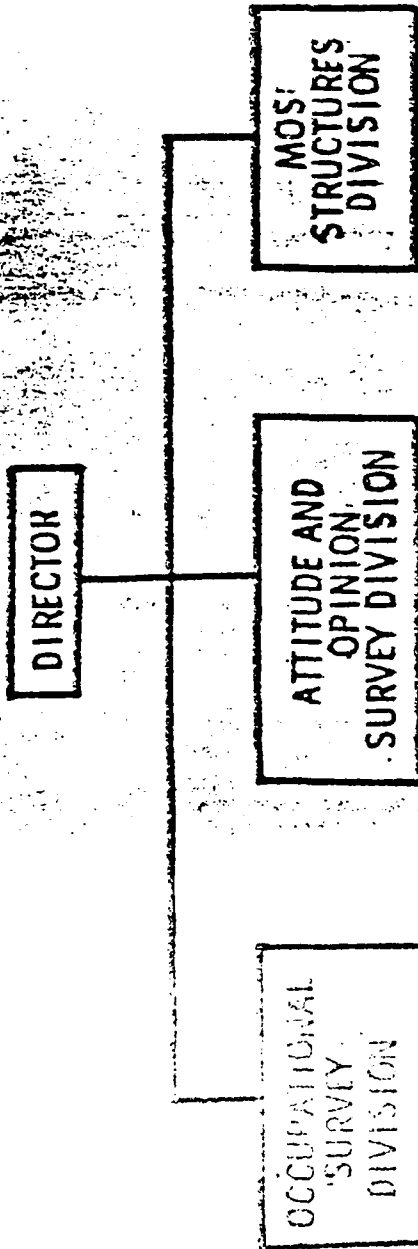
AR 611-101/112/201

AR 611-1

OCCUPATIONAL SURVEY DIVISION

```
                    CHIEF
                      |
      +---------------+---------------+
      |               |               |
  COMBAT          COMBAT          EVALUATION
  SUPPORT         SERVICE            AND
  BRANCH          SUPPORT          TESTING
                  BRANCH           BRANCH
```

ARMY OCCUPATIONAL SURVEY PROGRAM
(AOSP)

COMPREHENSIVE OCCUPATIONAL DATA ANALYSIS PROGRAMS
(CODAP)

AOSP USES:

o JOB ANALYSIS

o CRITICAL TASK SELECTION

o INSTRUCTIONAL PROGRAM DEVELOPMENT/EVALUATION

o SPECIALTY (AR 611/101/112/201) DEVELOPMENT EVALUATION

o PERSONNEL UTILIZATION

o JOB SATISFACTION

o RETENTION

AOSP YEARLY OBJECTIVES:

o OFFICER 20 - 25

o ENLISTED 50 - 60

INCLUDING TRAINING

ORIENTED DATA (E.G., TRAINING

EMPHASIS, LEARNING DIFFICULTY)

AOSP DATA COLLECTION

o DISTRIBUTION ARMY-WIDE

o QUESTIONNAIRE FOR EACH OFFICER INCUMBENT

o QUESTIONNAIRE FOR EACH ENLISTED IN
70% OF MOS

o STRATIFIED PROPORTIONATE (MACOM) RANDOM SAMPLE
IN 30% OF ENLISTED MOS

o MONITOR RECEIPT/RETURNS

AFSP INCUMBENT QUESTIONNAIRE SCOPE:

o BACKGROUND (DEMOGRAPHICS)

o TASKS

o SKILLS, KNOWLEDGE, ABILITIES, PHYSICAL

REQUIREMENTS, RESPONSIBILITES

EQUIPMENT

JOB SATISFACTION/RETENTION (ENLISTED ONLY)

o PERSONAL COMMENTS

AOSP USER SUPPORT:

o ORIENTATION

o TELEPHONIC INQUERIES

o INFORMAL TRAINING

o AOSP HANDBOOK

o ON-SITE ASSISTANCE

AOSP RELATIVE TIME SPENT SCALE:

1 = VERY MUCH BELOW AVERAGE
2 = BELOW AVERAGE
3 = SLIGHTLY BELOW AVERAGE
4 = AVERAGE TIME SPENT
5 = SLIGHTLY ABOVE AVERAGE
6 = ABOVE AVERAGE
7 = VERY MUCH ABOVE AVERAGE

(USED FOR ALL ENLISTED INCUMBENT SURVEYS)

AOSP PART-OF-POSITION SCALE

1 - INSIGNIFICANT PART-OF-POSITION
2 - SLIGHTLY SIGNIFICANT
3 - SOMEWHAT SIGNIFICANT
4 - MODERATELY SIGNIFICANT
5 - QUITE SIGNIFICANT
6 - HIGHLY SIGNIFICANT
7 - EXTREMELY SIGNIFICANT

(USED FOR ALL OFFICER INCUMBENT SURVEYS)

AOSP TRAINING FACTOR QUESTIONNAIRES

o RATINGS BY SMEs/SUPERVISORS, GENERALLY

  E-6/7   ENLISTED
  CW-3/4   WARRANT OFFICER
  O-4/5   COMPANY GRADE COMMISSIONED OFFICER

o SAME TASK INVENTORY AS INCUMBENT QUESTIONNAIRES

o SMALL SAMPLES

AOSP TRAINING FACTOR QUESTIONNAIRE SCOPE:

o BACKGROUND (DEMOGRAPHICS)

o TASKS

o PERSONAL COMMENTS

TYPICAL AOSP TRAINING FACTOR SCALES

o TRAINING EMPHASIS

o LEARNING DIFFICULTY

o CONSEQUENCES OF INADEQUATE PERFORMANCE

o TASK DELAY TOLERANCE

AOSP

TRAINING EMPHASIS:

o RESEARCH BASED-USAFHRL

o USUALLY REQUIRES RELATIVELY SMALL SAMPLES

o HIGHLY CORRELATED WITH TASK DELAY TOLERANCE AND CONSEQUENCES OF INADEQUATE PERFORMANCE

o AIMED AT SPECIFIC COURSE, SKILL LEVEL, GRADE, ETC.

COMPREHENSIVE OCCUPATIONAL DATA ANALYSIS PROGRAMS

CODAR

BACKGROUND:

o RESEARCHED BY USAF 1958 - 1967

o CONTINUING RESEARCH BY USAF HUMAN
  RESOURCES LABORATORY

o APPROVED FOR ARMY IN 1972

o USED BY US ARMED FORCES (ITRO)

o ALSO USED BY -

  FEDERAL AGENCIES
  STATE/LOCAL GOVERNMENTS

  BRITISH ARMY/NAVY

  CANADIAN ARMED FORCES

  PRIVATE INDUSTRY

  COLLEGES/UNIVERSITIES

CODAP

PROVIDES FROM JOB INCUMBENTS:

o PROBABILITY OF TASK PERFORMANCE

o AVERAGE PERCENT TIME SPENT BY TASK
  (ENLISTED)

o AVERAGE PART-OF-POSITION (OFFICER)
  RATINGS

o A PROFILE (E.G., AVERAGE PAYGRADE,
  DISTRIBUTION BY COMMAND, EDUCATIONAL
  LEVEL) OF THE SAMPLE

CODAP

PROVIDES FROM JOB INCUMBENTS (CONT.)

o EQUIPMENT USED, MAINTAINED, ETC.

o IMPORTANCE OF SKILLS, KNOWLEDGE, ABILITIES, AND PHYSICAL REQUIREMENTS (ENLISTED)

o SIGNIFICANCE TO JOB OF RESPONSIBILITIES.

o SKILLS, KNOWLEDGE, AND ABILITIES (OFFICER)

o MEASURES OF JOB SATISFACTION, UNIT MORALE, AND CAREER INTENT

CODAP

CAN PROVIDE FROM SUPERVISORS/SMES:

- o TRAINING EMPHASIS
- o LEARNING DIFFICULTY
- o TASK DELAY TOLERANCE
- o CONSEQUENCES OF INADEQUATE PERFORMANCE
- o OTHER TRAINING RELATED FACTORS

CODAP

		TRAINING EMPHASIS	RANK	TRAINING DIFF	RANK
	RANK				
	1	60	1	5.0	2
	2	45	2	6.5	1
	3	25	3	4.0	3

NEW SYSTEMS

- LSAR
- SPAS
- MIL STD 1388

ITPP REVIEW

- PARAGRAPH 4
- JTA PLAN

EVALUATION

- SERVICE SCHOOL EVALUATION PROGRAM
- COORDINATE WITH TRADOC IG

INCL 7

CHIEFS OF ANALYSIS FUNCTIONS

OBJECTIVE: DEFINE THE DUTIES AND
FUNCTIONS FOR WHICH YOU,
THE CHIEFS OF ANALYSIS,
ARE RESPONSIBLE FOR
PERFORMING.

JOB AND TASK
ANALYSIS PLAN

- **INCLOSURE TO ITPP**

- **DEVELOPED IAW TRADOC REG 351-4**

- **DESCRIBE A SYSTEMATIC APPROACH FOR JOB AND TASK ANALYSIS**

  - WHAT IS TO BE DONE

  - HOW IT IS TO BE ACCOMPLISHED

  - RESOURCES

  - MILESTONES

KEY
TO
JOB AND TASK ANALYSIS PLAN

- ## LOGICAL

- ## REASONABLE

- ## CLEAR

- ## FLEXIBLE

DRAFT

MIL STD 1388

LOGISTIC SUPPORT

ANALYSIS

o   DARCOM DRAFTED - JUN

o   LOG CEN - SCHOOL CD REVIEW

o   IDI - SCHOOL TD INFO

o   REVISION FORTHCOMING FOR REVIEW AND COMMENT

o   GUIDELINES FOR HIGH, MID, LOW TECH MOS

o   AT 1990 IMPACT ON ANALYSIS - FOCUS

o   MSG - CONTROLLING DEVELOPMENT AND DISTRIBUTION OF TNG
    SUPPORT PRODUCTS

o MESSAGE: CONTROLLING DEVELOPMENT AND DISTRIBUTION OF
   TRAINING SUPPORT PRODUCTS -- SUBJECT AREA TASK
   CONSTRAINTS

o ARMY TRAINING 1990: IMPACT ON ANALYSIS -- FOCUS

o GUIDELINES: HIGH, MID, LOW TECH MOS

CONSENSUS OF NEWCOMERS SESSION

CHIEFS OF ANALYSIS DUTIES AND FUNCTIONS	MEAN PERCENTAGE OF TOTAL TIME
O PERFORM INTERNAL QA/QC	20%
O PERFORM EXTERNAL QA/QC	5%
O PERFORM JTA	20%
O REVISE EXISTING JTA	10%
O PROVIDE EXTERNAL GUIDANCE	10%
O FORECAST RESOURCES	10%
(PMO	35%)
O SPECIAL PROJECTS	25%
O REVIEW QQPRI	10-30%
O DEVELOP/REVIEW POI	25%
O DEVELOP/REVIEW REPORTS	15%
O PROVIDE INTERNAL TRAINING	10%
O GIVE BRIEFINGS/HOST VISITORS	5%
O PROVE INPUT TO ITPP/JTA PLAN	7.5%
O MANAGE PERSONNEL	7.5%
O REVIEW DOCUMENTS	20%
O DEVELOP PILOT PROGRAMS	50%
O MONITOR CONTRACTS	15%

EXERPT OF
OPENING REMARKS
7th Chiefs of Analysis Seminar

It is appropriate at gatherings such as these to give you a bit of the pulse of the headquarters.

Certainly force modernization is a subject that the command is very much seized with, and appropriately so. We have lot of problems associated with the process. As the bow wave of new equipment enters the Army inventory, the training problems are huge.

A lot of the maintenance training manuals, Soldier's Manuals, and other items for new systems are not there. Some of this is very understandable. The schools have been under resourced to the tune of about 40-50% of the requirements and have had to labor long and hard to get out the training support products, essential for the family of organizations and equipment that we have had for a good many years. As a consequence, orientation on future systems was sort of back burner. That work is now on the front burner in varying degrees for various schools. One of the problems is the material acquisition process. The fact that you people are not involved early enough and with significant clout has a severe impact. We must get the trainers, as well as the manpower and personnel people, involved early on in the material development and acquisition process. I sense on the part of the Army senior leadership, a recognition of this need, largely as a result of the painful experiences occuring presently with some of the new systems. There is a recognition that we have to cut across commands, TRADOC and DARCOM for example. Whenever a hardware item gets into trouble, we can't indefinitely shift money and resources from training into the hardware, saying we'll fix that training problem on down the road.

Aside from force modernization, another major concern at HQ TRADOC are the issues associated with mobilization. Should we be required to mobilize, how will we do it, and how will we train up the forces required? There is an increasing recognition that should we become involved in an armed conflict, it may very well require mobilization. We have not paid much attention to that problem over the past decade, but I know that you are increasingly concerned about mobilization matters.

The next area is a much lower level of generalization, but much more of interest to you in your analysis roles. For a long time, we have had a disconnect relating analysis. Training Developments Instituite has been responsible for and concerned with the individual analysis. The Army Training Board (part of ATSC at Fort Eustis) has been concerned with collective analysis. Shortly, some changes in that regard may take place, analysis being analysis, collective and individual, the responsiblity for proponency at the headquarters level may be consolidated at TDI. It will be very helpful to the schools and will get away from one of our problems, namely a tendency to look at individual jobs and duty positions in isolation for the collective/unit context on which they are performed.

INCL 8

Frequently front-end or job and task analyses are conducted without reference to some sort of larger purpose. The collective analysis should focus the individual. You are more likely to come up with requirements for performance for the training of individuals if you look first at the collective and then key in and work your way into the individual analysis.

In the next couple of weeks, the schools will receive a final coordinating draft on the Systems Approach to Training Regulation, TRADOC Regulation 350-7. This is something the Staff and Faculty Training Division has been working on --long and hard--with a great deal of help from folks from ORAD and a very, very significant input from people throughout the TRADOC service schools.

The regulation represents the consensus of the training community as to what training is all about and how we systematically structure it and go about the business of getting the job done. We hope with the fielding of TRADOC Regulation 350-7, senior leaders throughout the TRADOC will come to understand the importance of front-end analysis to the training development process. Once the document is published, a command wide selling campaign will be initiated.

TRADOC Regulation 350-7 will be the capstone or an umbrella. Next will come a series of documents that will be "how to" and associated with the various phases of the Systems Approach to Training. The series will be supplementary, complimentary to the regulation itself, and will be designed to assist the schools in doing their job.

There are a couple of things about that regulation that are very significant. Evaluation has been moved from last to first to point out that we should not be fixing things that are not broken. If you do not have a problem, then there is no requirement for action. Particularly in a time of resource constraints, and now with this flood of new equipment entering the inventory, it is absolutely imperative that we hone in on the real problems and not worry about things that aren't bothering us.

Another significant aspect strongly emphasized in the regulation is that the focus of the training developments process is not the school. The focus is performance of the individuals in units and their collective performances as part of their team, squad, section, company, battery, troop, whatever. Interest is not in what individuals do in the classroom or in the training area, but what they do on the job. Also emphasized is the point that a performance deficiency on the job may not necessarily generate a requirement for skills and knowledge training. Maybe what ought to be done is re-engineer the environment or make some other sort of change.

The document will be going out to school Commandant's over a letter from General Brown, along with a couple of other supporting documents, revised 351-1, the TRAS ITP, and a new regulation from Army Training Support Center, 351-6, Support of Unit Training Plans, dealing with training support in units. These three documents should be coming out as coordinated drafts and should be to the schools in mid-April at the latest.

2

IDENTIFYING AND RESOLVING

THE

TRAINING ANALYSIS PROBLEMS

OR

MAKING A SYSTEMS APPROACH TO TRAINING

A

REALITY!

INCL 9

HOW FAR HAS YOUR SCHOOL COME?
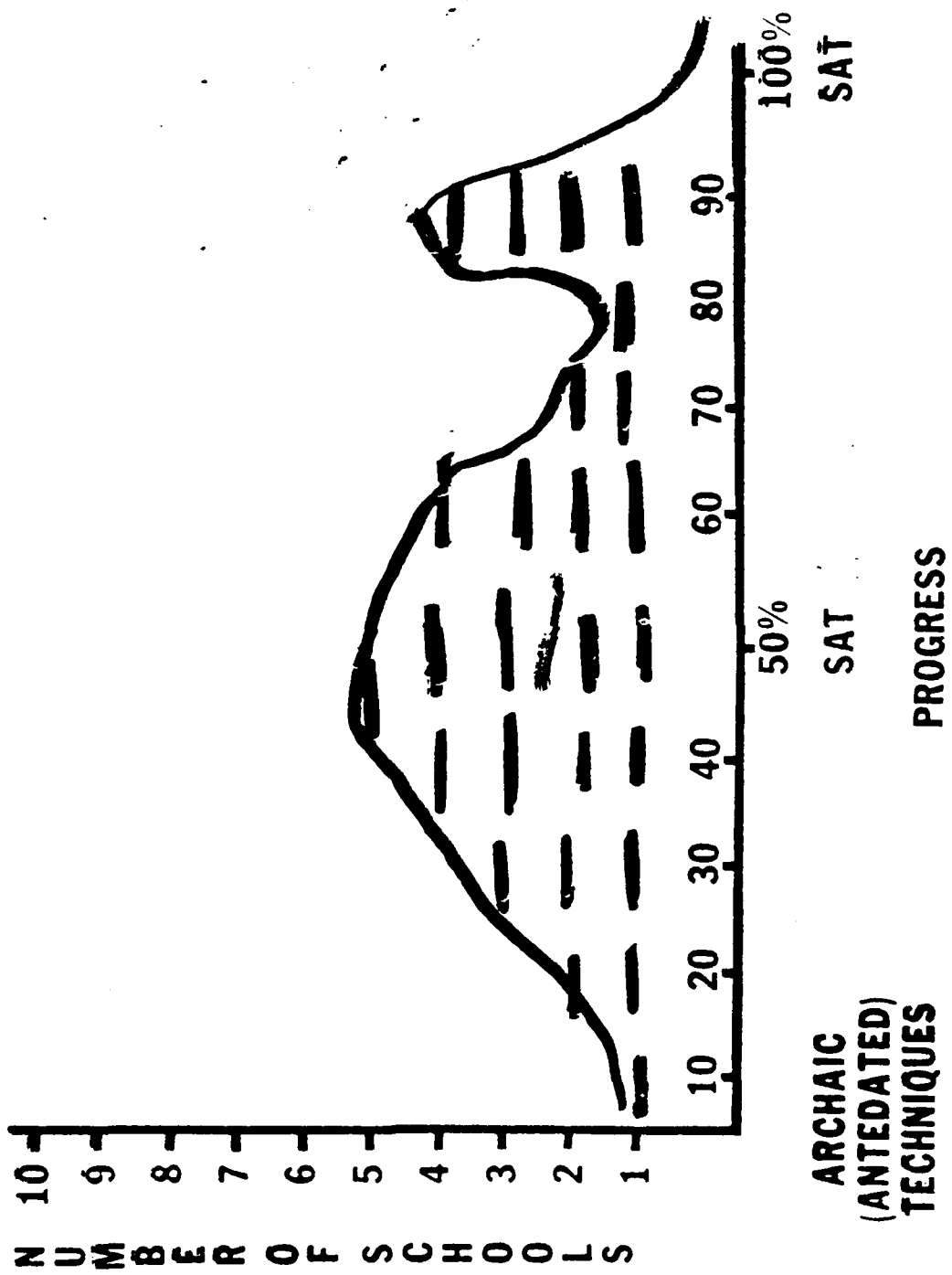
GROUP CONSENSUS, PRIORITIZED TD ISSUES

1. Lack of resources
2. Lack of training for trainers and support personnel
3. Acceptance of "The System (SAT)"
4. System complexity not integrated
5. Lack of interface (integration/coordination) with DARCOM, DA (OPS/MILPERCEN), CS, School TD (DTD)
6. Unprogrammed requirements
7. Soft Skill Analysis
8. ISD/SAT too prescriptive
9. Separation of tasks by skill levels

SMALL GROUP IN/OUT ISSUES

Numerous perceptions of what is all about.

Top down driven milestones and resources (AT 1990, Combined Arms, Software).

Application of systems approach to training.

Too many task selection criteria.

Lack of clearinghouse for various TD systems.

Separating tasks by skill level—how to, sorting.

Lack of simplistic, Army "Green Suit" orientation and training (need appropriate training for all).

Lack of resources, e.g., people, continuity, training, time cost-effectiveness, retention, turbulance.

Gaining acceptance for the system from management and others.

Organization and standardization of SAT.

Lack of understanding and support at director level.

Keep people from changing something just because they have new ideas.

Skilled, trained, motivated personnel.

Soft skill analysis (identification and analysis).

Training development, support for new system and doctrine (functions of changing priorities, etc.).

Complex circular process—getting caught in Phase I; no product
                              —inadequate rewards
                              —attempt to achieve perfection

INCL 11

FINAL REPORT RE DELIVERY ORDER NO. 0096
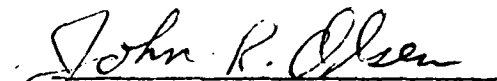
Submitted 15 December 1981

The views, opinions, and/or findings contained in this
report are those of the authors and should not be
construed as an official Department of the Army position,
policy, or decision, unless so designated by other
documentation.

Diane Dormant

Diane Dormant, Ph.D.
Analyst and Project Manager

John R. Olsen

John R. Olsen, Ph.D.
Analyst

INCL 12

FINAL REPORT RE DELIVERY ORDER NO. 0096

This is the final report on the interface with training analysis

staff in eight service schools for the purpose of gathering data

to revise analysis staffing guides.

PROCEDURES

An initial two-day meeting was held with COTR at the Training Development

Institute (Ft. Monroe, 30 Sept.- 1 Oct. 1981). COTR and the two project

analysts delineated and agreed on the scope, procedures, and specifications

of the project. COTR scheduled contacts in the analysis staff at eight

schools--four for each of the two analysts. These are indicated below:

ANALYST A	ANALYST B
U.S. Army Infantry School Ft. Benning, GA 18-20 October	U.S. Armor School Ft. Knox, KY 19-21 October
U.S. Army Missile and Munitions Center Redstone Arsenal, AL 2-4 November	U.S. Army Soldier Support Ft. Benjamin Harrison, IN 28-30 October
U.S. Army Engineer School Ft. Belvoir, VA 9-10 November	U.S. Army Field Artillery School Ft. Sill, OK 4-6 November
U.S Army Transportation School Ft. Eustis, VA 12-13 November	U.S. Army Academy of Health Sciences Ft. Sam Houston, TX 12-13 November

Each analyst made one site visit to become oriented to the data-gathering

environment prior to designing data-gathering instruments. The analysts

then met (Pensacola, 23-25 October) to share observations and rough data

and to design a structured interview form and a self-administered

questionnaire.

Each analyst then visited an additional three schools, gathered data
from questionnaires, structured and unstructured interviews, and
local documents. A total of eight schools was visited for a total
of 21 days on site. A total of approximately 69 personnel was
interviewed and a total of approximately 69 questionnaires was collected.

After each site visit, each analyst individually summarized observations
and data gathered and made a telephonic report to COTR summarizing
findings. At the conclusion of the last site visit, each analyst did
an individual, but comprehensive, summary of the four sites visited.
These individual reports were submitted to COTR.

The analysts met again (Houston, 1-3 December) to discuss observations
and synthesize data. This process and its importance to the final
recommendations of the analyst team are reported in more detail below.

A final meeting with COTR (Atlanta, 14-15 December) was held to discuss
findings and requirements of the final report.

FINDINGS

Both analysts found that while schools use PAM 570-558 to determine
personnel resource requirements, they assign personnel to this function
quite differently. Also, while they use PAM 351-4(T) or some locally
modified version to guide analysis, they define tasks and procedures
differently also. These latter differences exist, not only between
school, but within schools and even within analysis teams.

Differences indicated add to the difficulty of getting generalizable,

descriptive data on the analysis function as it now exists in service

schools. Nevertheless, at each school we attempted to identify what

might be critical in affecting or predicting the time it takes to do

analysis. A number of possible factors were identified. These are

grouped below:

- o factors external to DTD system (e.g., doctrine/regulation changes, TM changes, arbitrary/unpredictable time constraints, turnover/ availability of military personnel, resource availability)

- o non-MOS*factors internal to DTD (e.g., analyst/manager/SME availability, management systems, computer capability, documentation)

- o MOS-related factors
    - o MOS population (e.g., size, grade level, distribution, field vs. stateside, availability and experience of SMEs)
    - o MOS-related equipment (e.g., new vs. stable, on-line vs. under-development, individual vs. team used, low vs. high tech)
    - o MOS tasks (e.g., number, soft vs. hard, simulated vs. real)

The factors indicated above as either external or non-MOS internal

to the Directorates of Training Development may be critically important

to the efficiency and effectiveness of analysis and, for that matter,

to the entire Systematic Approach to Training process. However, they

are also beyond the scope of this project. Hence, the MOS-related

factors are those which were considered here for the manpower resource

allocation "yardstick."

Given a list of potentially critical and/or predictive MOS factors,

we attempted to devise a yardstick based on this list. As one step

in this process, we summarized some of the data collected, as seen

in the following table:

---

* Wherever "MOS" is used in this report, it should be taken to mean
"MOS/Specialty Codes/functional courses."

	Aver. No. Tasks per MOS polled	Days per task		
		Range	Average	Adjusted*
School 1	270	2 – 4	3	3
School 2	150	2 – 50	15	3.9
School 3	85	1.6 – 4.1	2.5	2.5
School 4	127	1 – 5	2.6	2.6
School 5	158	1.5 – 8	4+	3.5
School 6	99	2 – 40	5+	4
AVER. 148				

* This column represents each analyst's adjustment, based on expert opinion, to account for extreme estimates and local conditions.

It is obvious from this data that a wide variance exists for time reported as needed to analyze each task. In an effort to explain this range, we examined each factor in detail against time required for analysis. One by one, we looked at various aspects of each factor--its source(s), the status of analysis at that site, source and site credibility, factor consistency across sources and across sites, relationship to other factors, and potential usefulness as a yardstick predictor.

After two days we reduced the probable number of most useful predictive factors to four--number of tasks, hard vs. soft, real vs. simulated, and stability vs. instability. Based on our data relevant to these four factors, we devised the following matrix for possible use in allocating manpower to the analysis phase.

The number of days required to analyze the type of task indicated
is shown by the number in the appropriate cell:

TASKS	Real	Simulated
Hard	2*	2.5*
Soft	3*	5*

* Add .5 if the MOS is unstable, e.g., if it had more
than 10 major changes in the previous year.

While this matrix may represent the real manpower needs to do analysis,
it is unwieldy to apply and difficult to define in field use. Any one
of the factors could change during analysis based on SMEs, doctrine or
technical factors, etc. Therefore, we rejected this matrix as a
practical yardstick for the assessment of manpower needs for the analysis
phase.

CONCLUSIONS AND RECOMMENDATIONS

The present yardstick (NEW: 301 mandays; REVISE/UPDATE: 49 mandays) is
inadequate because of the wide variance in number of tasks in an MOS,
as well as because time required for revision is approximately the same
as time required for new analysis. Regarding the latter point, new MOSs
tend to be divisions of old MOSs, while revisions of existing MOSs
consistently require a complete analysis procedure.

The analysis process is complex and the factors that affect time required to do analysis are many. The matrix shown above demonstrated this factorial complexity. However, while analysis personnel are allocated by MOS, each school has proponency for many MOSs. Hence, the factors included in the matrix above tend to average out over MOSs at a given school.

The one factor that predominates as a predictor of time required to analyze is number of tasks. Therefore, it is our recommendation that the following yardstick be used to allocate manpower to analysis.

> 3 mandays x no. of tasks = manpower necessary to do
> a new or revised analysis

The above yardstick does not include the standard nonproductive allowance for annual leave, sick leave, additional military duties, etc.

It should also be noted that the time estimates of this recommended yardstick are based, not only on data and observations, but also on the following assumptions:

  o all personnel assigned to analysis are fully qualified or
    will be within three months of their assignment

  o tasks are defined in accordance with TRADOC doctrine

  o adequate survey data is available

  o SMEs and technical documents are reasonably available

Based on our assessment that an MOS/Specialty Code/ functional course

contains an average of 148 tasks (See data table, p. 4), the implication

of our recommendation of 3 mandays per task is that current staffing of

301 mandays per MOS/Specialty Code/functional course is approximately

two-thirds of the manpower required.

ADDITIONAL OBSERVATIONS

In collecting data for this contract, we observed a number of conditions

which impact on the quality and quantity of analysis. While these

observations do not fall within the mandate of our contract, they

should be addressed in applying the yardstick. Our observations have

been clustered below:

    o the <u>analyst's job</u> itself must be analyzed, tasks specified,

       and appropriate training and, where required, non-training

       remediation developed

    o a minimum <u>management standard</u> must be designed which addresses

       such areas as organizational structure, quality control of

       products, resource availability, personnel assignment, and training

    o <u>doctrine</u> must be developed and disseminated to assure a greater

       level of standardization of the analysis function across TRADOC

Diane Dormant, Ph.D.
Analyst and Project Manager

John R. Olsen, Ph.D.
Analyst

U.S. ARMY INFRANTRY SCHOOL
FT. BENNING, GA

U.S. ARMY MISSILE AND MUNITION CTR.
REDSTONE ARSENAL, AL

U.S. ARMY ENGINEER SCHOOL
FT. BELVOIR, VA

U.S. TRANSPORTATION SCHOOL
FT. EUSTIS, VA

U.S. ARMOR SCHOOL
FT. KNOX, KY

U.S. ARMY SOLDIER SUPPORT
FT. BENJAMIN HARRISON, IN

U.S. ARMY FIELD ARTILLERY SCHOOL
FT. SILL, OK

U.S. ARMY ACADEMY OF HEALTH SCIENCES
FT. SAM HOUSTON, TX

SYSTEM PROBLEM AREAS

External Factors

Internal Non-MOS Factors

MOS Factors

Population

Equipment

Tasks

SCHOOL PROBLEM AREAS

Organization under PAM 570-558

Procedures under PAM 351-4 (T)

Definitions

Training

TASKS PER MOS POLLED	DAYS PER TASK		
	RANGE	AVG	ADJUSTED
1. 270	2-4	3	3
2. 150	2-50	15	3.9
3. 85	1.6-4.1	2.5	2.5
4. 127	1-5	2.6	2.6
5. 158	1.5-8	4	3.5
6. 99	2-40	5	4
AVERAGE 1'48			

TASKS	REAL	SIMULATED
HARD	2	2.5
SOFT	3	5

3 MANDAYS x NO. OF TASKS = MANPOWER NECESSARY TO DO
A NEW OR REVISED ANALYSIS

A JOB AID MUST:

- BE USED IN THE ACTUAL JOB SITUATION

- PROVIDE SOME SIGNAL OF WHEN TO TAKE ACTION

- GIVE DIRECTIONS ON WHAT TO DO

- REDUCE LENGTH OF RECALL TIME

THE PURPOSE OF A JOB AID IS

TO INFLUENCE THE PERFORMANCE

OF A JOB AND TO MINIMIZE THE

NEED TO RECALL.

"WHIPPED" DATA:

- JOB AIDS ARE CHEAPER TO PREPARE (IN TERMS OF TIME AND MONEY)

- JOB AIDS ARE USUALLY MORE EFFECTIVE THAN TRAINING

YOU ......

GET YOUR JOB DONE

FASTER, EASIER AND MORE

EFFECTIVELY!

(QUANTITIVE AND QUALITIVE OUTPUT)

ADVANTAGES OF JOB AIDS:

- THEY DON'T FORGET. HUMANS DO.

- THEY CAN DETAIL COMPLEX OR A LARGE NUMBER OF STEPS. SOME HUMANS CAN.

- THEY ARE EASY TO CHANGE. HUMAN BEHAVIOR IS NOT.

DISADVANTAGES OF JOB AIDS:

○ THEY MAY SLOW THE JOB DOWN

○ THEY MAY BE PHYSICALLY IMPOSSIBLE TO USE

○ THEY MAY NOT BE USED. (PEOPLE WON'T USE THEM)

JOB AID ANALYSIS:

● ASSESSING THE TRADE-OFFS (PRO'S AND CON'S)

● DETERMINING WHICH OF THE FOLLOWING IS "TRUTH":

— THIS TASK CAN BE JOB AIDED WITHOUT INSTRUCTION TO RECALL

— THIS TASK REQUIRES INSTRUCTION-TO-RECALL

— THIS TASK CAN BEST BE DONE WITH A COMBINATION OF THE TWO (AID 'N' INSTRUCTION)
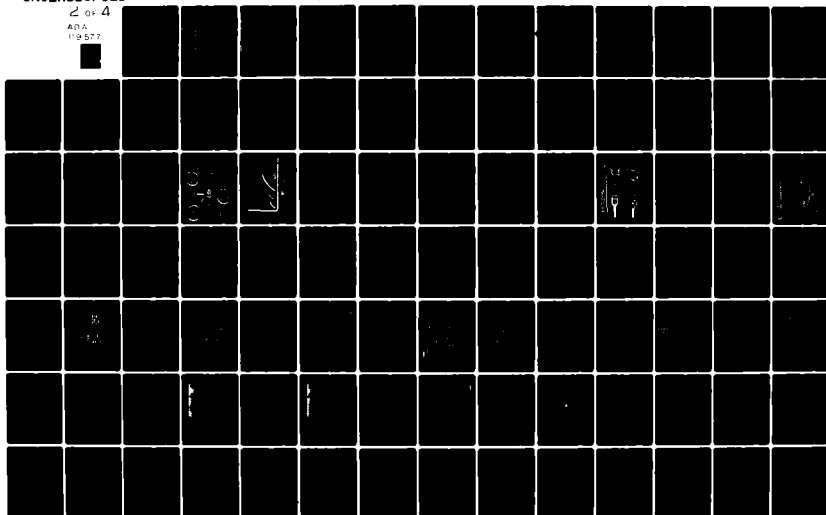
JOB AIDS may be appropriate when:

- CONSEQUENCES OF ERROR ARE SO SEVERE THAT WE CAN'T CHANCE FORGETTING.

- TASK IS VERY *DIFFICULT* AND/OR *COMPLEX*

- THE TASK IS DONE *INFREQUENTLY* (CAUSING A LACK OF RETENTION)

- TASK PROCEDURE IS LIKELY TO *CHANGE*

- YOU HAVE LIMITED DEVELOPMENTAL *TIME*, *STAFF*, AND/OR *MONEY* *(RESOURCES)*

DON'T EMPLOY JOB AIDS WHEN:

- TASK HAS SEVERE *TIME* CRITERION

- TASK IS VERY *FREQUENT*

- USE IS *IMPRACTICAL* BECAUSE OF:

  — PHYSICAL CONSTRAINTS

  — PSYCHOSOCIAL FACTORS

EXAMPLES OF NON-EQUIP FUNCTIONS WHICH MAY BE AIDED......

- DECISION-MAKING
- PROBLEM-SOLVING
- GENERIC MANAGEMENT SKILLS
- QUALITY CONTROL/INSPECTION
- SOME INTER-PERSONAL SKILLS
- MANY ACCOUNTING TASKS
- ADMINISTRATIVE FUNCTIONS
- FIELD/COMBAT OPERATIONS
- SOME FIRST AID TASKS
  ETC.

Graphic Aids Service Center

IMPLEMENTING MEDIA FOR JOB AIDS . . . . . .

- ARs/SUPPLEMENTS
- FIELD MANUALS (FM)
- LOCAL REGULATIONS
- SCHOOL HANDOUTS
- PROGRAMED INSTRUCTION (ONLY IF "TO GO")
- COMPUTER PROGRAMS
- DA PAMPHLETS!

PAMPHLETS:

- GUIDE PERFORMANCE (SAY "HOW-TO" "WHEN")

- COME FROM HIGHER HQ

- ARE AVAILABLE IN THE FIELD (TO EVERYONE)

- CAN BE USED IN COMBAT, COMBAT SERVICE, AND COMBAT SERVICE SUPPORT ENVIRONMENT

- CAN BE USED IN PEACE-TIME AS WELL AS DURING HOSTILITIES

- HAVE LIGITIMACY

- ARE EASILY CHANGED

JOB AID FOR DECIDING IF
JOB AID SHOULD BE DEVELOPED OR INSTRUCTION ONLY

(Given a task that is deficient due to lack of skill/knowledge.)

```
┌─────────────────────┐                              ┌─────────────────────┐
│ Would use of job aid │                              │ Should NOT develop  │
│ result in too slow   │─────── Yes ─────────────────▶│ a job aid. (Instruc-│
│ performance? (TIME   │                              │ tion-to-recall only │
│ CRITERION.)          │                              │ for the task.)      │
└─────────────────────┘                              └─────────────────────┘
          │                                                     ▲
          No                                                    │
          ▼                                                     │
┌─────────────────────┐                                         │
│ Job aid difficult to │                                        │
│ use because of PHYS- │                                        │
│ ICAL CONDITIONS,     │─────── Yes ────────────────────────────┤
│ and no way to mini-  │                                        │
│ mize?                │                                        │
└─────────────────────┘                                        │
          │                                                     │
          No                                                    │
          ▼                                                     │
┌─────────────────────┐                                        │
│ Performer will not   │                                        │
│ use job aid because  │                                        │
│ of PSYCHOSOCIAL      │─────── Yes ────────────────────────────┤
│ factor, and no way   │                                        │
│ to minimize?         │                                        │
└─────────────────────┘                                        │
          │                                                     │
          No                                                    │
          ▼                                                     │
┌─────────────────────┐          ┌──────────────────────────┐  │
│ Task performed FRE-  │          │ Task characterized by one│  │
│ QUENTLY enough       │── Yes ──▶│ or some combination of   │  │
│ to justify training- │          │ these:                   │  │
│ to-recall?           │          │ − High CONSEQUENCES?     │  │
└─────────────────────┘          │ − Large AMOUNT?          │──No─┘
          │                      │ − Likely to CHANGE?      │
          No                     │ − High COMPLEXITY?       │
          ▼                      │ − Low BUDGET?            │
┌─────────────────────┐          │ − Needed QUICKLY?        │
│ SHOULD develop job   │          └──────────────────────────┘
│ aid as part of the   │                      │
│ treatment of the defi-│                     Yes
│ cient task. (Go to   │◀─────────────────────┘
│ Job Aid for Deciding │
│ If Instructional Sup-│
│ port Needed.)        │
└─────────────────────┘
```

CLEANING THE VALVE STRAINER

A   UNSCREW *(by hand)* spray cut-off valve assembly from strainer housing – pay special attention to CAUTION note shown below

TURN

HOLD

strainer housing

CAUTION

When joint separates, take care not to let strainer hit side of housing!

B

TURN
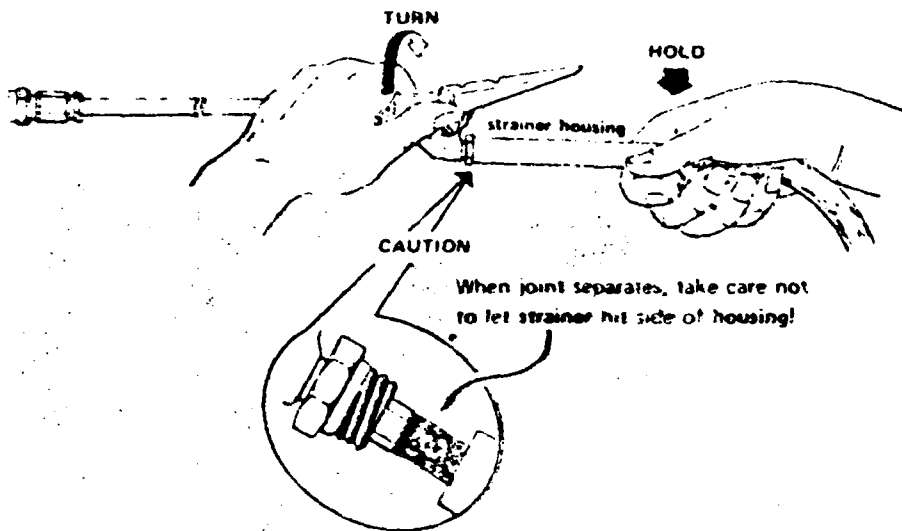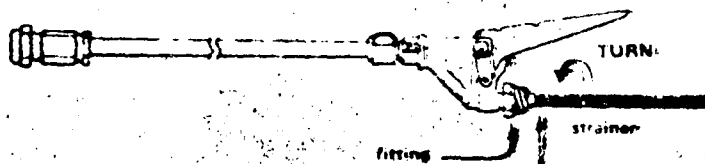
fitting   strainer

1. *Grip with fingers here* ⌐ and
   UNSCREW strainer from fitting.
   Use wrench *only* if absolutely necessary

2. WASH strainer thoroughly in water.

C   REASSEMBLE

1. Grip with fingers here ⌐ and SCREW
   strainer into valve – finger tighten only!

2. SCREW valve into housing, hold housing
   ... fitting – finger tighten only.

Example of COMPUTER WORKSHEET

WORKSHEET: CALCULATING COST OF DEVELOPMENT

1. Check the categories of performers to be assigned to the project.

   a. Analyst   ☐   f. Clerk   ☐
   b. Writer   ☐   g. Cameraman   ☐
   c. A-V Specialist ☐   h. Photographer ☐
   d. Typist   ☐   i. Editor   ☐
   e. Artist   ☐

2. Calculate DIRECT LABOR:

PERFORMER CATEGORY	NO. OF WEEKS	SALARY/ WEEK	TOTAL (Weeks X Salary)
		TOTAL DIRECT LABOR:	

3. Calculate OVERHEAD: Multiply No. 2 X 95%   _____

4. Add No. 2 to No. 3:   _____

5. Calculate OTHER DIRECT Expenses:

   Airfares   _____
   Surface Transportation _____
   Lodging   _____
   Meals   _____
   Supplies   _____

                     Total OTHER DIRECT _____

6. Add No. 4 and No. 5   _____

7. Multiply No. _____ General and Administrative Cost   _____

8. TOTAL COST OF DEVELOPMENT (Add Lines No. 7)   _____

WORK ORDER No.

GRAPHIC AIDS SERVICE CENTER

DECISION TABLE FOR SELECTING JOB AID FORMAT

IF TYPE OF PERFOR- MANCE OF TASK IS:	AND:	AND:	THEN:
SEQUENCE (No complex decisions)	*No written responses*	————————➤	COOKBOOK
	Written responses	Directions are simple	WORKSHEET
		Directions are complex	WORKSHEET *plus* COOKBOOK
Complex DECISIONS (No sequence involved)	One, two, or three factors ("if's" and "and's")	————————➤	DECISION TABLE
	Four or more factors	————————➤	ALGORITHM
Complex DECISIONS *within* an overall SEQUENCE	————————➤		COOKBOOK and/or WORKSHEET *plus* DECISION TABLE or ALGORITHM
Initial DECISIONS leading to alternate sequences		➤	Initial DECISION TABLE or ALGORITHM *plus* COOKBOOKS and/or WORKSHEETS

ATSS-DTD   30 FEBRUARY 1982

SUBJECT: REQUEST FOR PUBLICATION OF DA PAMPHLET

HQDA
ATTN: PROPONENT FOR XYZ - SERIES PAMPHLETS
WASHINGTON, DC 20000

1. ANALYSIS CONDUCTED AT THIS SCHOOL AS PART OF THE ARMY'S
CONTINUING EFFORT TO IMPROVE INDIVIDUAL SOLDIERING SKILLS
INDICATE A NEED TO PROVIDE INCUMBENT WIDGET-WATCHERS AN AID TO
PERFORMANCE.

2. DUE TO RESOURCE CONSTRAINTS, AS WELL AS THE RESULTS OF OUR
ANALYSIS, THE US ARMY SCHOOL SCHOOL SHOULD PROVIDE THIS AID VIA A
JOB PERFORMANCE AID (JPA). OUR DEVELOPMENTAL STAFF HAS DRAFTED
THE INCLOSED JPA ENTITLED "WATCHING WIDGETS FOR BEGINNERS
AND REQUEST YOU PUBLISH IT AS A PAMPHLET IN THE ARMY XYZ - SE
(PREFERABLY XYZ-9 SINCE IT IS ASSOCIATED VERY STRONGLY IN THE
WIDGET ASSEMBLY TASK GUIDED IN XYZ-8).

3. THE CONTENT OF THE JPA IS BASED ON AN INDEPTH PROCESS TO
DETERMINE THE CUES AND ELEMENTS OF ACTUAL ON THE JOB PERFORMANCE.
THE AID IS THEN DESIGNED BASED ON STATE-OF-THE-ART JOB AID
TECHNOLOGY. IT HAS BEEN VALIDATED BY A PROCESS OF FIELD TRIALS
AT FORT PERFORMANCE. THUS, IT IS TECHNICALLY CORRECT.

4. QUESTIONS OR OTHER ISSUES SHOULD BE DIRECTED TO OUR POC,
MAJOR C. MINOR, CHIEF WIDGETING TASK FORCE, AUTOVON 125-5567.

FOR THE COMMANDANT

                                    DIRECTOR, TRAINING DEVELOPMENTS

THE SKILL PERFORMANCE AIDS PROGRAM

(SPAS)

Definition

Program to Improve the Maintenance and Operations of Army Equipment through. . . . . .

    Improved Technical Manuals

    Extension Training Materials (ETM) for
    Supervised OJT

. . . . . . Developed together with each new system as a major part of the Integrated Logistics Support (ILS).

SPAS INSURES THE TRANSFER OF INFORMATION

FROM THE MATERIEL DEVELOPER . . . .

TO THE SOLDIER

EFFECTIVE APPROACH

SPAS policies and development strategies are based
on over 25 years of research studies <u>and</u> practical
experience. The program standards that must be met in-
clude:

>   Front End Analysis
>
>   Clear detailed specifications
>
>   Rigid acceptance testing

SPAS SYSTEMATICALLY DETERMINES REQUIREMENTS.. . . . .

THEN INSURES THEY ARE MET

Common Data Base for TM and Training

Regardless of "format" used the most successful innovations in technical manual and training have all been based on a comprehensive analysis of the equipment, the job and the personnel expected to perform the job. The SPAS approach goes one step further in insisting that this procedure be formalized, traceable and utilize the same data base for training as is used for hardware documentation and technical manual preparation. This permits:

More effective matching of user skills with technical manual contents.

Performing trade-offs between training and technical manuals

Insuring that all tasks are adequately covered by either the technical manual, training or both.

SPAS PROVIDES A PROCESS

FOR MAKING DECISIONS

3

THE ANALYSIS PROCESS

```
          A                          D
  ┌─────────────┐            ┌─────────────┐
  │ Equipment   │            │ Personnel   │
  │ Source      │            │ Source      │
  │ Data        │            │ Data        │
  └─────────────┘            └─────────────┘
        │                          │
  (Logistic Support          (Target Audience
  Analysis (LSA) Data)       Description)
        │                          │
        ▼  B                       ▼  E
  ┌─────────────────┐        ┌──────────────────┐
  │ Total Task List │───────>│ Existing         │───> TM Requirement
  │ Individual Task │        │ - - - - - - -    │
  │ Details         │        │ Skills/Knowledge │
  └─────────────────┘        │ Skills List      │
        │                    │ Reading Grade    │
        │                    │ Level            │
        ▼  C                 │ - - - - - - -    │───> New Skill
  ┌─────────────┐            └──────────────────┘     Requirements
  │ Total Skills│───────>                              (Tasks for Tra
  │ Required for│                                      ing Candidate
  │ New System  │                                      for ETM or Al
  └─────────────┘                                      (formal schoc
```
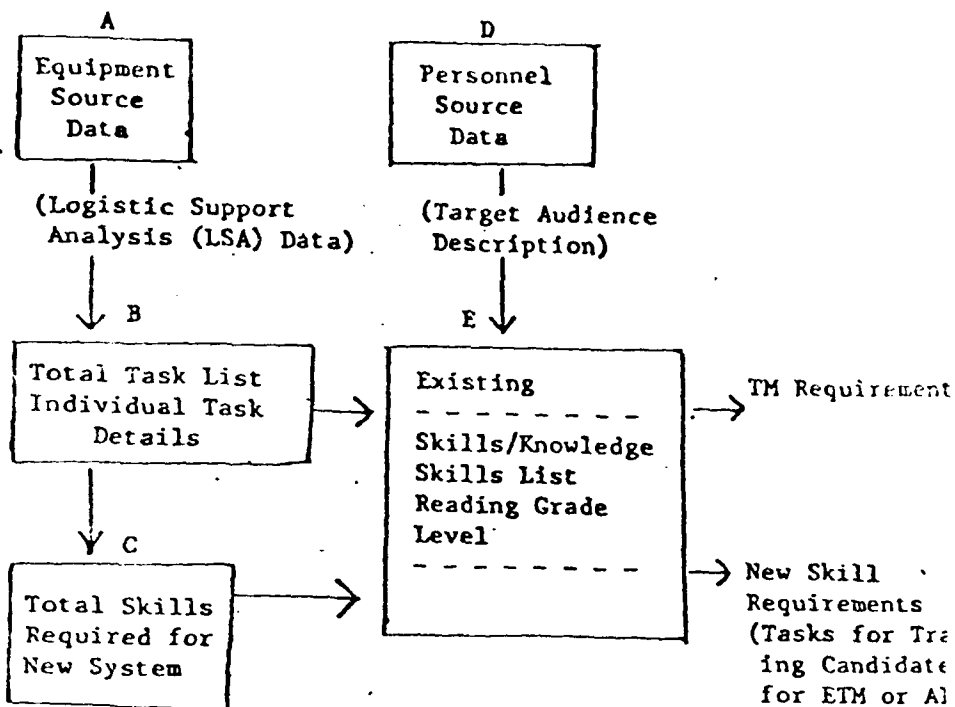
A. MISSION/HARDWARE   Relates hardware end items to mission funtions.
   ANALYSIS
                        Determines impact of end item/component failure.

                        Determines list of operator/maintenance tasks.

B. TOTAL TASK   Provides details of each task as input to TM and pro-
   REQUIREMENTS
                        vides data for identifying skill requirements.

C. SKILL ANALYSIS   List of Cognitive and Psychomotor skills (Test equipment/

                        tool use, verval skills, eye/hand coordination, concepts

                        etc.)

D. PERSONNEL ASSESSMENT Describes target audience soldiers who are expected to

                        operate and maintain the system in terms of skills now

                        taught in formal AIT schools and aptitudes of soldiers

                        in the respective specialties.

E. TM/TRAINING   Determines level of detail required in TM manuscript, type
   REQUIREMENTS
                        of troubleshooting format etc. based on user description.

                        Determines which additional skills will have to be

                        trained and tasks which require training and/or refresher

                        training.   4

PROCEDURALIZED   Step-by-step instructions

ILLUSTRATED   Keyed to relevant illustrations on same or facing page

DESIGNED FOR EASY USE   Task oriented, well indexed, minimizes cross referencing

COMPLETE   Based on Front End Analysis and use of actual hardware
                              in TM writing process

ACCURATE -   Contractor validates 100% of the TM pages on actual
                              hardware

Disconnect cable 2W2P1 from
the night tracker and secure
the loose end of cable to the
velcro retainer inside the APC.

VELCRO
RETAINER

2W2
CABLE

2W2P1

5
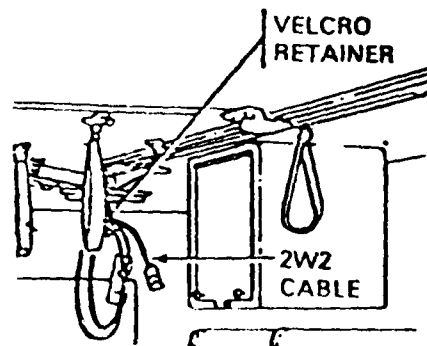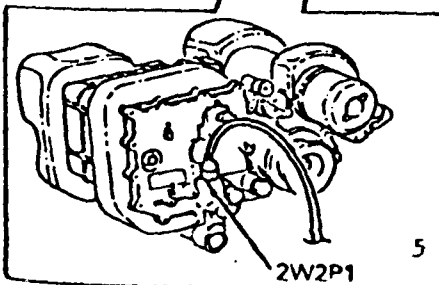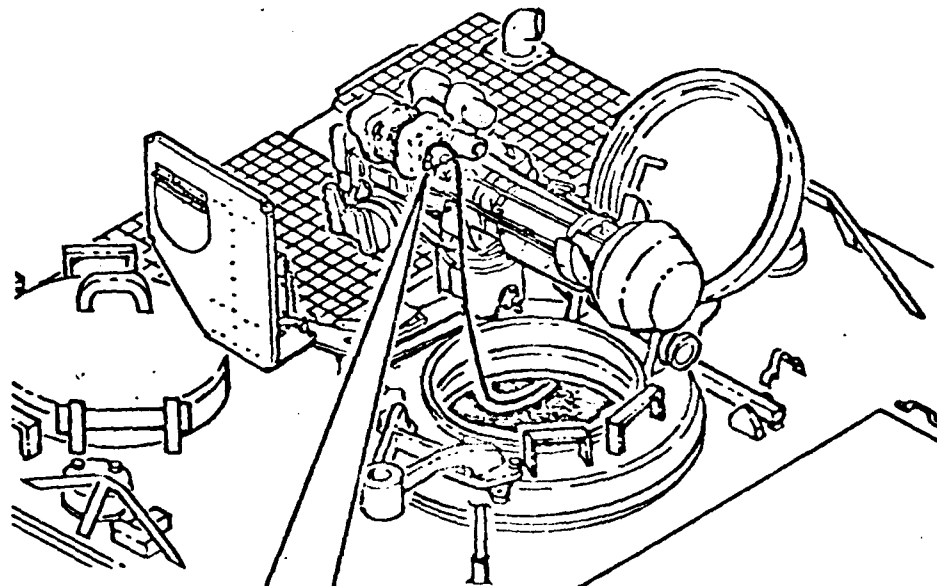
GO TO NEXT PAGE

Implications for Training

TM serves as primary training reference for both formal school and especially for OJT. For equipment specific tasks all that is required for OJT training is an adequate management plan for the use of the TM in on-the-job training, tests and some supplementary training materials for tasks that are particularly difficult. SPAS ETM is designed to fill this need.

```
WHEN PROPERLY PREPARED . . . . .

SPAS DRAMATICALLY REDUCES THE REQUIREMENT

FOR ADDITIONAL TRAINING MATERIALS
```

SYSTEM PERFORMANCE FACTORS

COMMUNICATION

COMMUNICATION

ORGANIZATION

HARDWARE

TSM
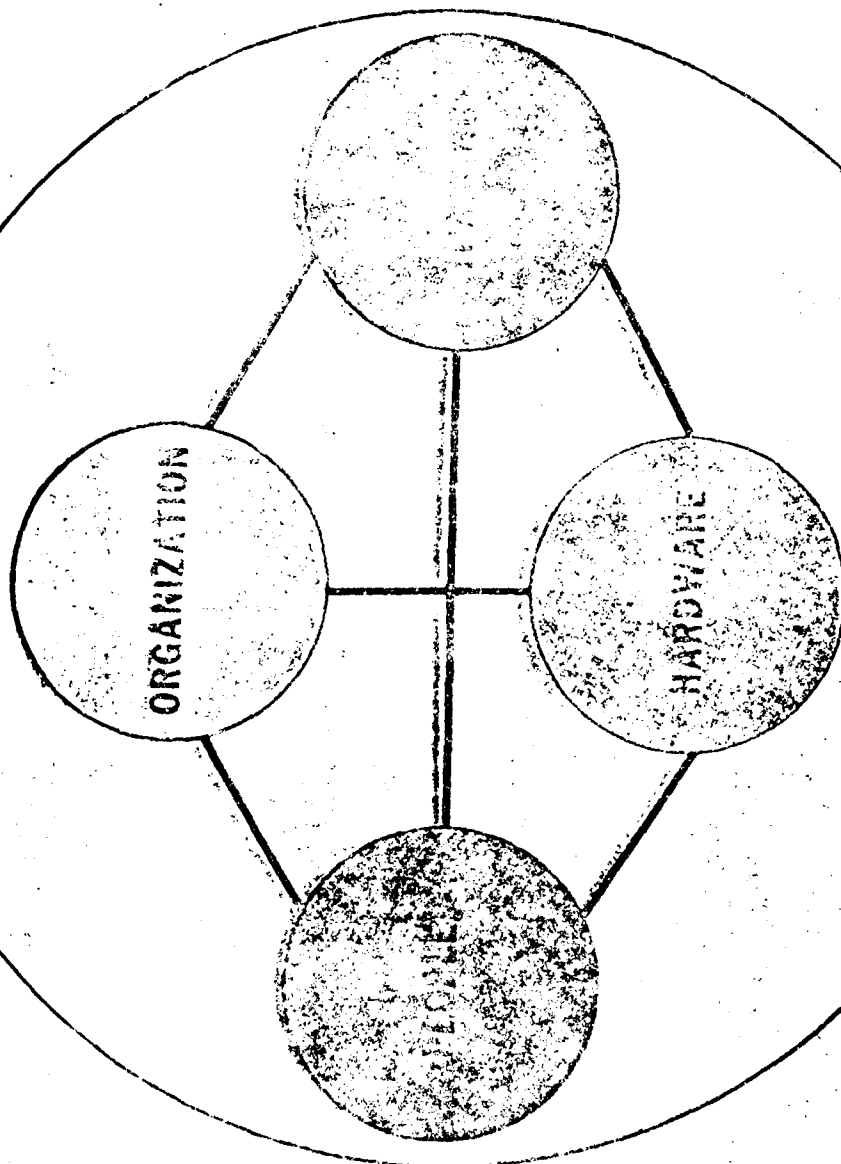
o UPDATE TRADOC PAM 70-2

o DEVELOP TRADOC MANAGEMENT INFORMATION SYSTEM

o DECENTRALIZE COMMAND REVIEW AND CLARIFY RESPONSIBILITY

o PACKAGE AND SHORTEN REQUIREMENT DOCUMENTS WITH BOIP AND QQPRI

TSM

o RE-EXAMINE AND CLARIFY OT

o RE-EXAMINE TD EFFORT AND INCLUDE TD AND PERSONNEL SUPPORTABILITY AT
  ASARC!

ISM

O POC: O LTC BITTRICH
ATCD-P
AUTOVON 680-3501/3602

O DEFENSE SYSTEMS MANAGEMENT COLLEGE
ATTN: DRI-R (JOHN SOLOMON)
FT BELVOIR, VA 22060
AUTOVON 354-2289

TSM

o STABILIZE AND INTENSIVELY MANAGE TSM

o TRAIN TSM PRIOR TO, OR EARLY IN, ASSIGNMENT

o DEVELOP SELF-PACED CD PACKAGE

TRAINING
EFFECTIVENESS
ANALYSIS

O TRASANA

O PMD $\longrightarrow$ M-1 TANK

POST
FIELDING
EVALUATION

O PFE: SHORT-TERM (TENTATIVE)

O BUILD ON BRANCH TRAINING TEAM SUCCESS

O QUICK AND DIRTY

O AID COMMANDER SUSTAIN

O UTILIZE HARLESS JOB AIDS

o PFE: LONG-TERM

   o USE R&D AND TESTING ORGANIZATIONS BETTER

   o LINK-UP TEST AND TD COMMUNITY - FEED OT TO ARTEP AND SAT

   o GIVE COMMANDER VALIDATED TESTS AND CHECKLISTS WITH EQUIPMENT

o EXAMPLE: TOW

OT   ARTEP   LIVE FIRE

LIVE MISSILE   STATIC BLAST   LIVE MISSILE

W/O WARHEAD   SIMULATOR VS.   VS. STATIC

VS. LIVE,   TIME LIMIT C   HULL

REACTIVE TANKS   NO TARGET

SYSTEM
INTERFACES

M-16 RIFLE

AN INCOMPLETE LISTING OF THE INTERFACES FOR ONE PIECE OF EQUIPMENT
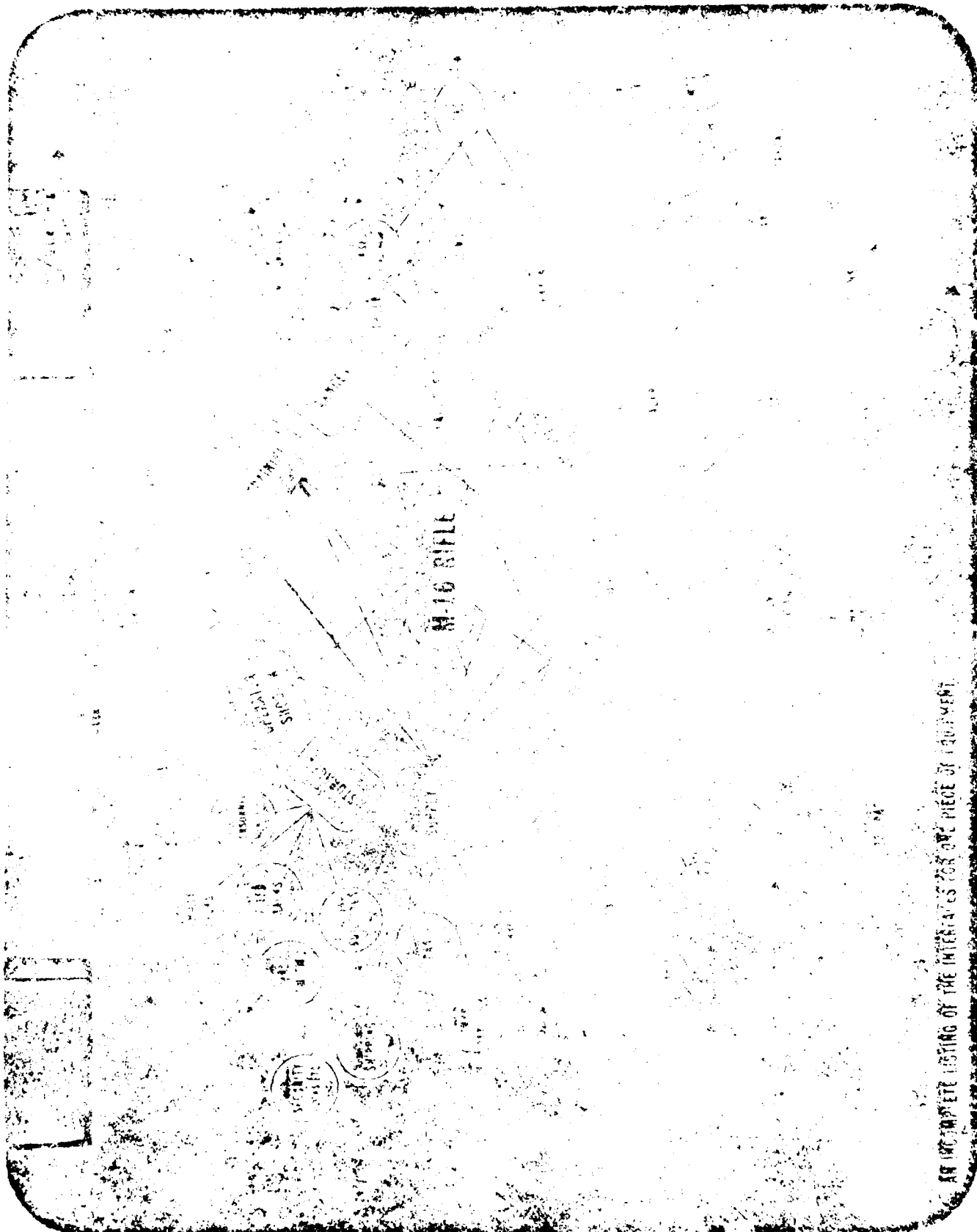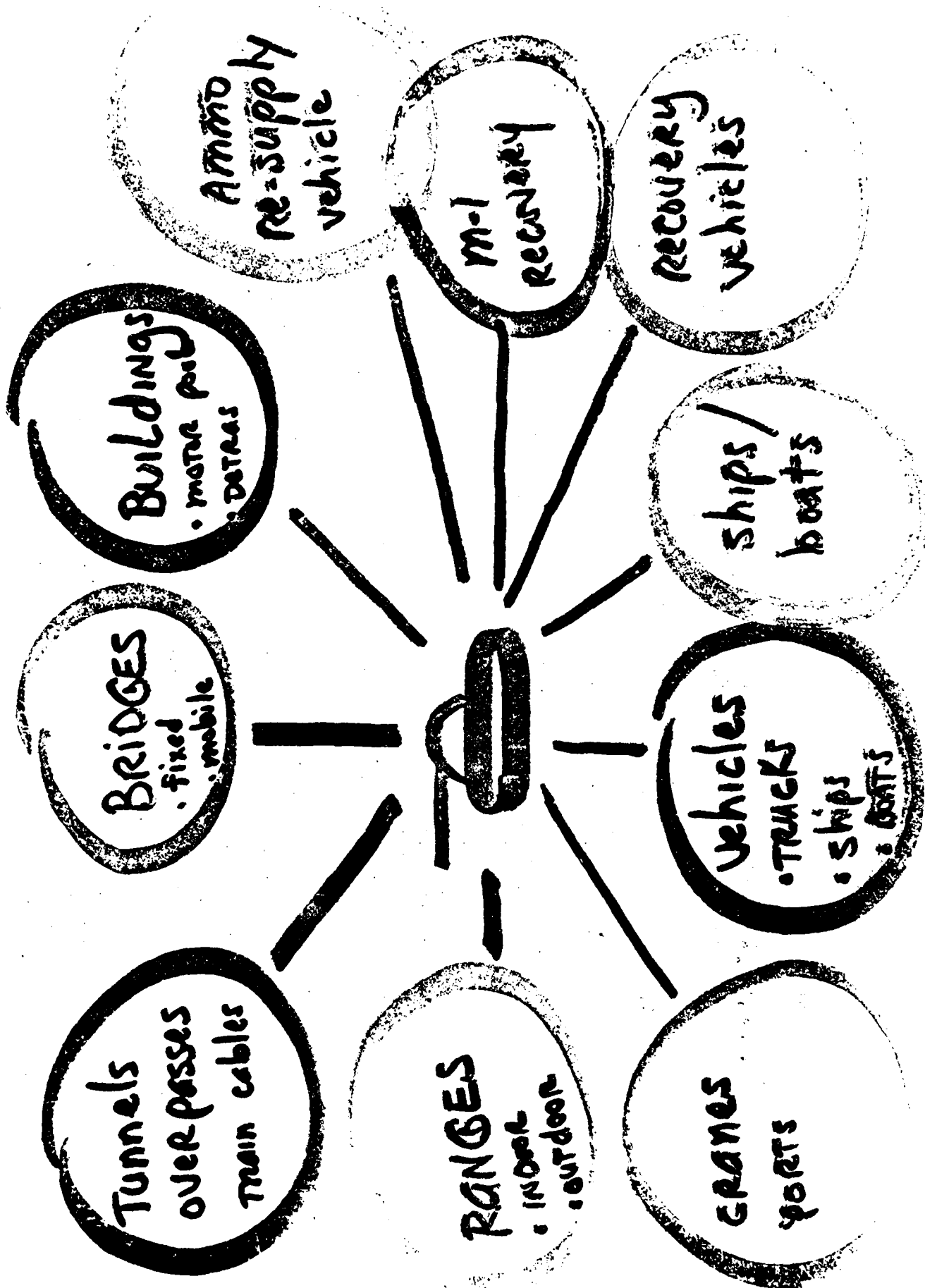
ORGANIZATION

o 85% PROBLEMS CAUSED BY MANAGEMENT - DEMMING

o CONSIDER MATRIX OR TASK FORCE STRUCTURE

o CONSIDER SEPERATING PRODUCTIVE, POLICY, AND MANAGEMENT

ORGANIZATION
MANAGEMENT/PRODUCTION

	CMF	CMF	PROP. AREA
POLICY			
TEC			
SQT			
ARTEP			

ORGANIZATION

o IDENTIFY AND HIRE CORRECT CAREER FIELD

o TAP RESOURCES

o MILK SYSTEM:

o USE HI-TECH WISELY

o RUTHLESSLY ELIMINATE PRODUCTS

TAP RESOURCES

- O DTIC
- O NTIC
- O RDIS
- O REPORTS
- O FSTC
- O DIA
- O 11TH MI
- O SAFETY CMD

- O OTEA
- O TECOM
- O TRASANA
- O LIASON OFF.
- O JOURNALS
- O AF, NAVY
- O NATO

HARDWARE

o LOOK ACROSS SYSTEMS

o BUILD JOB AIDS INTO MACHINE

o TRACK SAFETY CMD DATA

o HUMAN ENGINEERING

HARDWARE
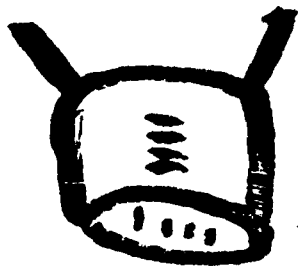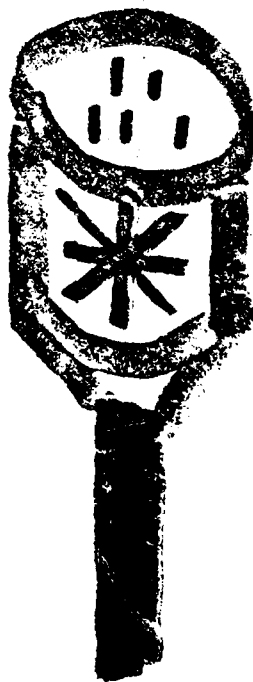
PEOPLE

o TIE INTO WRAIR. LAIR, NATICK, ETC.

o IDENTIFY PHYSICAL NEEDS

   EX. VISION FOR TOW GUNNER OR HEIGHT FOR M-1 DRIVER

o TRACK PERFORMANCE VS. KEY DATA

COMMUNICATE

o CROSS BRIEF

o CROSS TRAIN

o JOURNALS

o DISPLAYS (POSTERS, WALL BOARDS)

o MAGAZINES

  o S&T (STRATEGY AND TACTICS)

  o JANE'S DEFENSE REVIEW

  o HOT LINES

  o INDEXES

    EX. MARINE CORPS SEARCH MAGAZINE
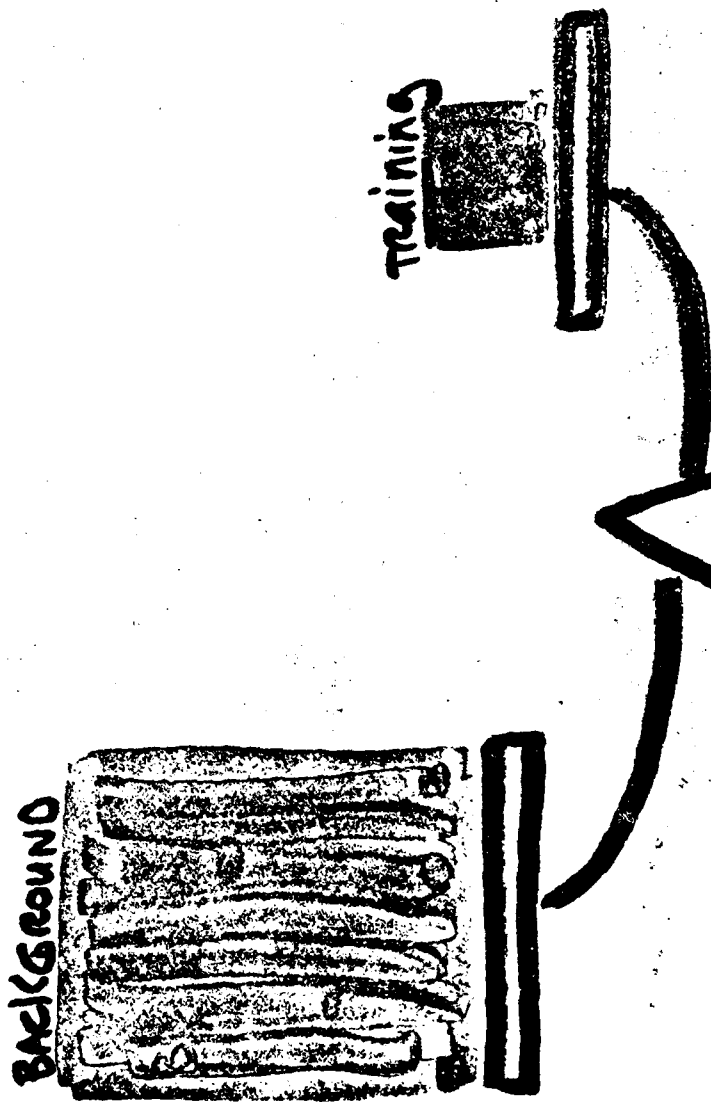
TRAINING

o FOCUS ON FIELD COMBAT PERFORMANCE

o USE SQT CONSTRUCTION IN ALL ARENAS (HIGH PAYOFF)

o TRAIN FOR SUCCESS (START SLOW & SIMPLE)

o MAXIMIZE JOB AIDS

TRAINING

o TRAIN GROUPED TASKS TOGETHER (EX., RADIO, MAP, CALL FOR FIRE)

o DEVELOPMENTALLY TEST ALL PRODUCTS

o KEEP SIMPLE; FIGHT "EXPERTITUS"

TRAINING: SIMULATION

o USE MILES

o TRACK ACROSS SYSTEMS

o DE-SANITIZE TRAINING

o DESIGN PERFORMANCE SIMULATORS THE FIELD CAN USE

   + SIMPLE + PORTABLE + GENERIC + CHEAP + DE-CENTRALIZED

TRAINING

O MILES

   O <u>VERY</u> POWERFUL TOOL

   O SOLDIERS TAKE BEING "KILLED" <u>VERY</u> SERIOUSLY: BE CAREFUL

   O EXCELLENT TOOL TO TRAIN CS AND CSS

   O EXCELLENT TOOL TO TEST TRAINING (OR SQT/ARTEP) OR CONCEPTS

TRAINING: SIMULATION

O TRACK ACROSS SYSTEMS

   O ARE CONTROL PANELS ALIKE?

   O ARE COMMANDS SIMILAR? (E.G., TANK, IFV, ITV, TOW)

   O ARE PRIORITY AND STATUS CODES CONSISTANT? (E.G., MOPP, REDCON,

       ETC.)

TRAINING: SIMULATION

o DE-SANITIZE TRAINING

o WORKS CREATE STRONG MENTAL IMAGES AND EXPECTATIONS

  EX. ENGAGE/SERVICE TARGETS VS. KILL THE ENEMY

o USE HOLLYWOOD-STYLE STUNT TOOLS TO CREATE STRESS AND SHOCK OF

  BATTLE

  EX. MOULAGE KITS, BLOOD BULLETS, BLOOD BAGS, VOMIT, ETC.

TRAINING: SIMULATION

o DESIGN SIMULATORS THE FIELD CAN USE

o LOOK AT RUSSIAN TANK GUNNERY SIMULATORS

o EVALUATE FIELD'S NEEDS AND SUPPORT PROBLEMS

EX. VIDEO-BASED TRAINING BUT NO PLAYERS LIMITED RANGES AND

SMALL (1 KM) TRAINING AREAS

O SIMULATORS

O STRIVE FOR PSYCHOLOGICAL FIDELITY, NOT ENGINNERING FIDELITY

EX. PLYWOOD M113 TO PRACTIVE LITTER LOADING

O BASE SIMULATOR ON OPFOR CHARACTERISTICS

EX. MOBILE, REACTIVE MINIATURE TANKS VS. ARCADE ELECTRONICS

TRAINING: IDEAS

o LAYERING

o TEAM TEACHING

o CLEAR CODING

o BUILD-IN OPFOR

o VIET CONG STRATEGY

TRAINING: IDEAS

O LAYERING

   O GETTING MULTIPLE USES OUT OF SAME EVENT; BUILDING IN REPETITION

     EX. O AMBUSH DRILL ON ROAD MARCH

          O CADENCE SONGS EMPHASIZING LESSONS

          O CARRYING LITTERS BETWEEN CLASSES

          O SETTING UP TENTS FOR CLASSROOMS

TRAINING: IDEAS

O TEAM TEACHING

   O COMBINING CADRE AND INSTRUCTORS

   O MAKING RESPONSIBLE FOR ENTIRE POI FOR ONE CLASS

   O ADVANTAGES

      O AVOIDS "US-THEM" CLASH

      O YIELDS BETTER NCO

      O ALLOWS INSTRUCTOR TO KNOW STUDENT'S NEEDS

      O MAY SAVE MANPOWER

TRAINING: IDEAS

o CLEAR CODING

o USING ABBREVIATED FUNCTIONAL NAMES INSTEAD OF NUMBER-LETTER
  CODES

o TAKES LESS TRAINING AND YIELDS BETTER PERFORMANCE

EX: o TASK NOS.

o 171-357-1002 = S/M+P/1.1/WPN/E.45

o WEAPON NOMENCLATURE

TRAINING IDEAS

O BUILD-IN ORDER

    O YOU PLAY LIKE YOU PRACTICE

    O MANY UNITS AND SCHOOLS TRAIN "BLUE-ON-BLUE"

    O BETTER TRAINING WITH "RED-ON-BLUE"

    O USE OPFOR TEAM TO PLAY ADVERSARY ROLE IN NEW EQUIPMENT DESIGN

TRAINING: IDEAS

o VIET CONG STRATEGY

o FIND CHEAPEST WAY TO TRAIN

o USE HIGH TECH WISELY

o KEEP IT SIMPLE

TRAINING: THE END

O PEOPLE REMEMBER:

  O 16% OF READING

  O 90% OF DOING

TARGET POPULATION

o GS-11, GS-12, O-3, O-4, O-5

o 22 YEARS EXPERIENCE = EITHER SERVICE OR TRAINING

o AGE 42-50

o COLLEGE DEGREED

o DUTY: CHIEF OF DIVISION OR BRANCH

o TASKS

MANPOWER MANAGER
MATERIEL MANAGER
FINANCE & FACILITY MANAGER
}
MAKES ASSIGNMENTS
INTERPRETS POLICY
WRITES GUIDANCE
EVALUATES INSTRUCTION

o TRAINING - 59% TRAINED IN CRI OR ISD

INCL 16

BACKGROUND

- APRIL 1981 - NEED EXPRESSED
- TECHNICAL - CRI, ISD, HARLESS
- SR MANAGER - SFTD, TRADOC

TIME LINE

- 31 MAR – DRAFT OF DESIGN
- 30 APR – DRAFT OF DEVELOP
- 31 MAY – VALIDATE WITH FIELD
- 31 JUL – CORRECTIONS/REVALIDATE
- 31 AUG – DRAFT OF IMPLEMENT
- 30 SEP – DRAFT OF EVALUATE
- 1 OCT – IMPLEMENT ANALYZE, DESIGN, DEVELOP
- 1 DEC – IMPLEMENT - IMPLEMENTATION & EVALUATION

MIDDLE MANAGERS COURSE (MMC)
(PROPOSED)

o COURSE FOR MIDDLE MANAGERS (MM) OF SERVICE SCHOOLS; TRAINING, AND INTEGRATING CENTERS

o WILL FILL THE VOID BETWEEN TECHNICAL LEVEL TRAINING AND THE TRADOC SENIOR MANAGERS COURSE (SMC)

o AT PRESENT IN THE CONCEPTUAL STAGE

o REQUIREMENTS -

   ANALYSIS
   - IDENTIFICATION OF TARGET POPULATION, TASKS, SKILLS, AND KNOWLEDGES

   DESIGN
   - ARRANGEMENT OF TASKS/OBJECTIVES INTO TRAINING SEQUENCE, SELECTION OF TRAINING MODE, AND SITE

   DEVELOPMENT - COURSE PRODUCTION

   IMPLEMENTATION - PROJECTED FALL OF FY 82

o TDI-SFTD ACTION AGENCY

STEPS

1. TASK LIST PRODUCED
2. TASKS VERIFIED
3. TASKS SELECTED
4. TASKS ANALYZED
5. PYRAMIDS
6. OBJECTIVES
7. LESSON PRODUCTION

WHAT THE TRADOC DOES
IN STAFF AND FACULTY
DEVELOPMENT?

REALITY - KEY TO WHETHER THE TRADOC SUCCEEDS OR FAILS IN ITS MISSION!

SUB MISSION -

TRAIN THE TRAINERS
TRAIN THE ANALYSTS, DESIGNERS, DEVELOPERS, EVALUATORS
TRAIN THE SUPERVISORS

NO EASY TASK CONSIDERING THE:

ACQUISITION PROCESS

LCSMM

NEW SYSTEMS

OLD SYSTEMS

COMPLEXITY OF ISD SYSTEM

SHEER NUMBERS OF TRAINING SUPPORT MATERIALS

OF TURBULENCE
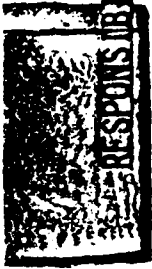
RESPONSIBILITY:

SCHOOL STAFF & FACULTY TRAINING ELEMENTS

POLICY
INITIAL TRAINING
SUSTAINMENT TRAINING
- ISD
- CRI
- SQT
- ITC
- COUNSELING
- TRAS/ITP
- TNG MGMT
- ETC.

IDI STAFF & FACULTY TRAINING DIVISION

POLICY
QUALITY CONTROL
CLEARING HOUSE
POC
TRAINING ASSISTANCE
POLICY
"HOW TO" PUBLICATIONS

WORKSHOPS
SEE

SHORTCOMINGS:

TRADOC POLICY

"HOW TO" PAMPHLETS

TECHNICAL TRAINING PROGRAMS

MIDDLE MANAGER TRAINING

PROFESSIONAL TRAINERS/TRAINING DEVELOPERS

SC 28

QUALITY/QUANTITY OF PERSONNEL

TURBULENCE

ISD

SYSTEMS ENGINEERING

PERFORMANCE BASED INSTRUCTION
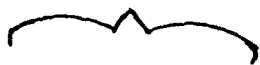
SYSTEMS

APPROACH

TO TRAINING

EVOLUTION

NOT

REVOLUTION

TRAINING

SYSTEMS APPROACH TO TRAINING (SAT) PACKAGE

SAT REGULATION	"HOW TO" PAMPHLETS	TRAINING PROGRAMS
PHASE I	PHASE II	PHASE III

FUNCTION:

- SERVE AS QUALITY CONTROL AGENT (EVAL)
- DEVELOP TRAINING PROGRAMS FOR S&F MANAGERS
- ENSURE IMPLEMENTATION OF REGULATIONS/GUIDANCE
- PROVIDE TRAINING FOR SC 28 & SMC
- COORDINATE TRAINING FOR DCST STAFF
- CONDUCT ASSISTANCE & EVALUATION VISITS
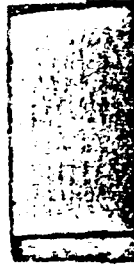
SFTD OBJECTIVE/MISSIONS

OBJECTIVE: THE SFTD WILL DEVELOP, COORDINATE AND IMPLEMENT TRAINING STRATEGY
WILL INSURE THAT S&F PERSONNEL ARE TRAINED TO ACCOMPLISH THEIR MISSION.

IC:

LOP POLICY AND GUIDANCE (S&F)

ULATE POLICY FOR SC 28 AND SMC

NATION:

VIDE POC FOR SFDD AT HQ TRADOC & HQ TO SFDD

SERVE AS QUALITY CONTROL AGENT FOR S&F (EVAL)

LOP REGULATION/GUIDANCE

DINATE TRAINING FOR SMC & SC 28

DINATE TRAINING OF DCST STAFF

VE AS "CLEARING HOUSE" FOR SFDD MATTERS

ILITATE COORDINATION BETWEEN THE SCHOOLS

UCT ASSISTANCE AND EVALUATION VISITS
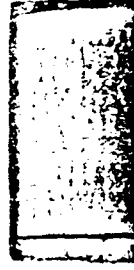
SFDD OBJECTIVE/MISSIONS

...IVE: THE SFDD IS THE PROPONENT AGENCY WITH THE MISSION TO ASSURE THE
...DANT THAT HIS STAFF AND FACULTY WILL BE TRAINED TO ACCOMPLISH THE
...OL'S MISSION.

... TEGIC:

...CEIVES GUIDANCE AND DIRECTION FROM TRADOC TDI S&F

...ITES S&F REGS, PAMS, CIRCS, ETC.

...VIEWS CMD'S POLICIES FOR IMPACT ON S&F TRAINING

...NTIFIES S&F TRAINING NEEDS

...ON ND PROFESSIONAL TRAINING PACKAGES/COURSES TO TRAIN THE SCHOOLS

...TAFF AND FACULTY

...DUCTS RESEARCH IN ED & TNG TECH

6-7
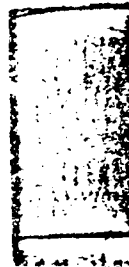
...ATION:

- ...SULTS WITH TRADOC TDI S&F ON POLICY, GUIDANCE, & TRENDS
- ...SULTS WITH OTHER SCHOOL S&F'S
- ...SULTS WITH INTERNAL SCHOOL DIRECTORATES, AGENCIES, ACTIVITIES: ETC.
- ...SULTS WITH CIVILIAN EDUCATION & TRAINING AGENCIES

...NTATION:

- ...VELOPS TRAINING COURSES/MATERIALS
- ...NDUCTS APPROVED TRAINING COURSES
- ...RFORMS QUALITY CONTROL OF COURSES CONDUCTED
- ...VELOPS & CONDUCTS BRIEFINGS
- ...MINISTERS INSTRUCTOR RECOGNITION PROGRAMS
- ...LEMENTS INTERN TRAINING

3-3
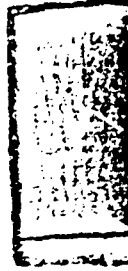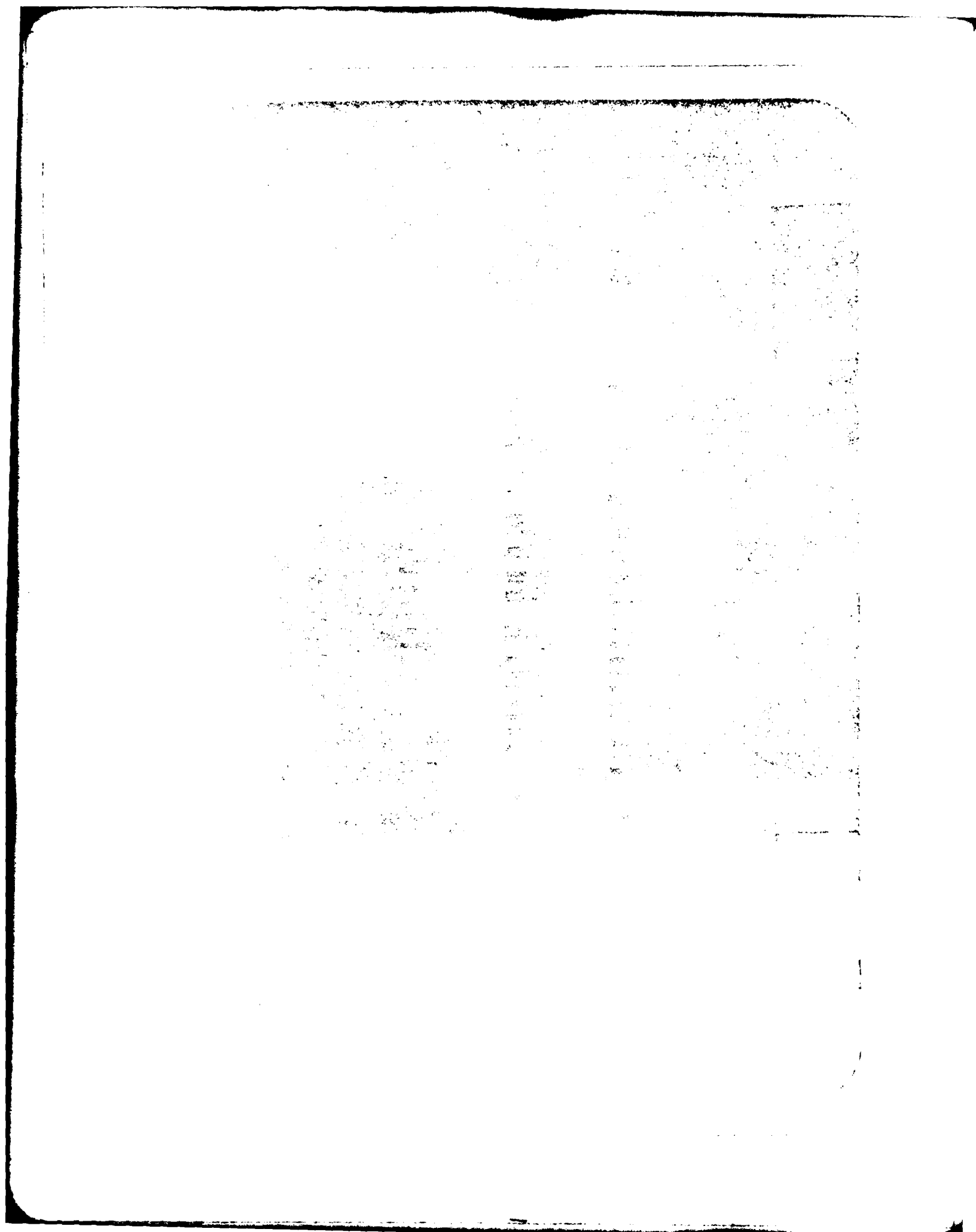
TECHNICIANS JOBS

- TRAINING ANALYST
- CRITERION TEST DEVELOPER
- COURSE DEVELOPER
- VISUAL INFORMATION SP
- COURSE MANAGER
- TRAINING FACILITATOR
- SYSTEM ANALYST
- TEST & MEASUREMENT SP

SENIOR MANAGERS JOBS

- COMMANDANTS
- ASSISTANT COMMANDANTS
- DIRECTORS, COMBAT DEVELOPMENTS
- DIRECTORS, TRAINING DEVELOPMENTS
- DIRECTORS, COURSE DEVELOPMENTS (WHEN NOT UNDER DIRECTOR TRAINING DEVELOPMENTS)
- DIRECTORS, TRAINING
- DIRECTORS, ACADEMIC DEPARTMENTS
- DIRECTORS, EVALUATION
- EDUCATION ADVISORS
- PROJECT MANAGERS

G CENTERS

COMMANDERS
DEPUTY COMMANDERS
BRIGADE COMMANDERS

OC

COMMANDER
DEPUTY COMMANDER
CHIEF OF STAFF
ALL DEPUTY CHIEFS OF STAFF
ALL ASSISTANT DEPUTY CHIEFS OF STAFF
DIRECTORS AND DIVISION CHIEFS AS SPECIFIED BY
DEPUTY CHIEFS OF STAFF
SENIOR EDUCATION ADVISOR

TRADOC SENIOR MANAGERS COURSE

(SMC)

- TRAINING COURSE FOR TRAINING SENIOR MANAGERS (SM) OF SERVICE SCHOOLS, TRAINING, AND TRAINING CENTERS

- DIRECTED BY GEN D. PUY (FALL 1976) TO ASSIST SM IN:

  - UNDERSTANDING SYSTEMS APPROACH TO TRAINING

  - PROVIDING GUIDANCE TO SUBORDINATES

  - SELECTING TRAINING PRODUCTS AND SUPPORT MATERIALS

- PROVIDES FORUM FOR DISCUSSION OF CURRENT TRADOC TRAINING ISSUES

- ...TRAINING DEVELOPMENT, COMBAT DEVELOPMENT, AND RESOURCE MANAGEMENT
  AREAS

- FIVE ... PER FY AT AN ISOLATED TRAINING SITE

- 52 HOUR COURSE (160 PER FY)

- TDI ... ACTION AGENCY

SENIOR MANAGERS COURSE (SMC) ATTENDEES (CUMULATIVE)

NUMBER OF ...

200	
100	
50	

CALENDAR YEAR   77   78   79   80   81
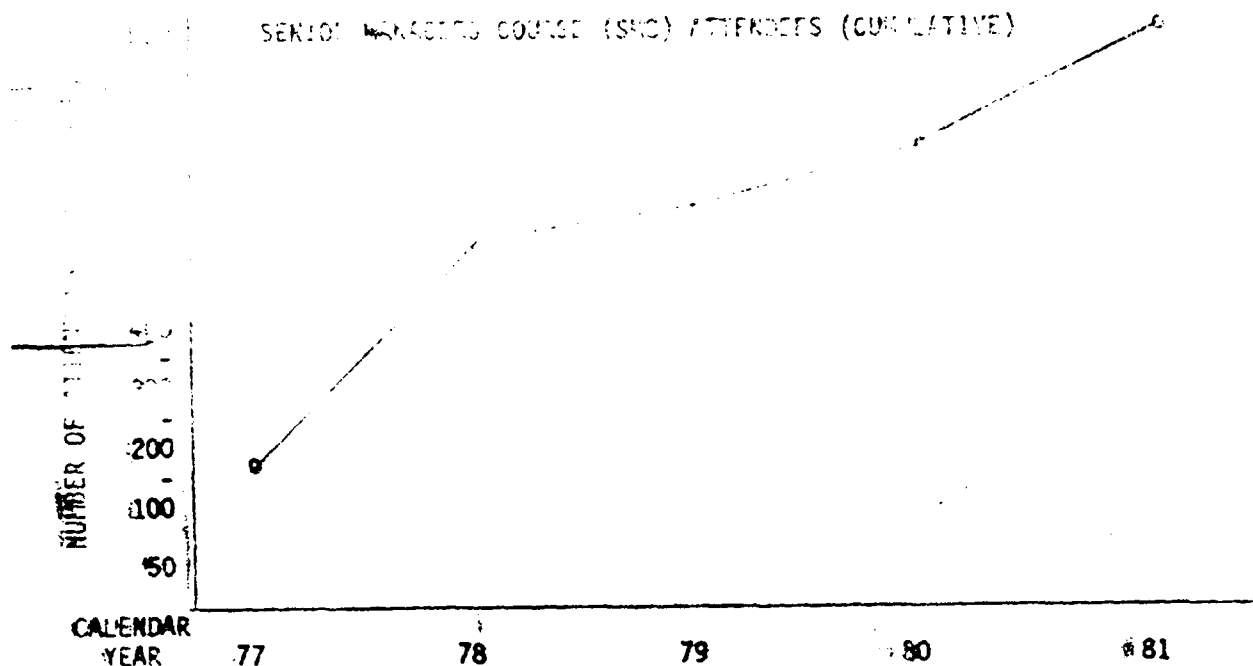
SENIOR MANAGERS COURSE

- COURSE OBJECTIVES: ASSIST NEWLY ASSIGNED SENIOR MANAGERS TO:
  - UNDERSTAND THE SYSTEMATIC APPROACH TO TRAINING
  - GIVE GUIDANCE TO SUBORDINATES
  - EVALUATE SCHOOL PRODUCTS

- TOTAL OF 34 SESSIONS CONDUCTED FOR 879 ATTENDEES SINCE 1977

- EVOLVED FROM: TO:
    2 TRACKS   5 TRACKS
    ALL TD   INCORPORATE CD
    MODULES 80% CRI/20% TRADOC   MODULES 50% CRI/50% TRADOC

- TRADOC GENERAL OFFICERS CONDUCT PANEL AND SEMINARS

- COURSE WORK SUPPLEMENTED BY SEMINARS

THE ABCD MODEL

Diane Dormant

Training implies change, change on the part of the learner. If you are involved in the design and development of training, you are — in a sense — a change agent. Although the literature of change agentry is vast, it has rarely been related to training in non-educational organizations. That is the purpose of this article.

The ABCD Model provides the trainer with a structure for analyzing and planning for change. As shown in Figure 1, the model includes the following elements: Adopters, Blackbox, Change Agent, and Domain.

FIGURE 1.
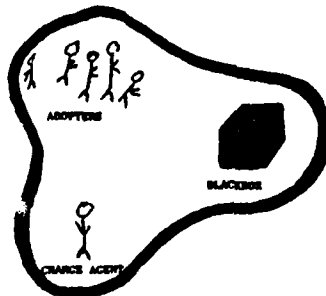
The Adopters are the target population — those you would like to change through training. The Blackbox is the innovation — the new procedure or product — which you would like them to adopt as a result of training. The Domain is the context the in which the Adopter and the Blackbox exist — organizational structure, the physical plant, and other "givens" which are relevant to the adoption of your Blackbox.

ADOPTERS

Why call them "Adopters"? Think of training as getting others to do or use something new. The goal is not just to expose the learners to a new procedure or product, but rather to get them to accept or adopt it.

Calling the learners "adopters" emphasizes the "choice" aspect of the situation. It emphasizes the active relationship between the learners and the new procedure or product. It emphasizes the need — if training is to be optimally effective — for internal acceptance of your Blackbox by the learner. Knowing "where your learners are" in this acceptance or adoption process can increase your effectiveness as a trainer. First, let's look at where they can be.

ADOPTER STAGES

Learners or potential adopters can be in quite different stages with regard to something new. As seen in Figure 2, each stage represents a different relationship between the adopter and the innovation or Blackbox. The adoption stages which an individual passes through as he moves toward full adoption of your Blackbox follow:

1. <u>Awareness</u>. It's no surprise to find that the first step for a potential adopter involves becoming aware of a Blackbox. This initial stage is one in which the person is passively receptive—neither seeking nor avoiding information with regard to the Blackbox. (For example, an employee in the accounting department who has just heard for the first time about a new computer system for use in accounting has entered the awareness stage.) If information so received is more positive than negative, the person remains open to receive additional information and to the eventual adoption of the Blackbox.

2. <u>Self-Concern</u>. Once aware of the Blackbox, the potential adopter may become actively concerned about how this new procedure or product will personally affect him. What new demands will it make upon him? Will he have a new role in the department? in the company? Will it change his relationship to the decision-making process within the organization? to the reward system? (For example, the employee in accounting might wonder if his job will be in jeopardy, if he'll be able to learn fast enough to satisfy his boss, if he'll be asked to put in a lot of overtime during the change-over, and so forth.) If the person's self-concerns are adequately met during this stage, he may pass willingly to the next stage.

3. <u>Mental Tryout</u>. The potential adopter begins mentally to try out the Blackbox in his own work situation. Thinking about cost, efficiency, management, scheduling, implementation, and time-demands, the potential adopter evaluates the Blackbox in his own circumstances. (For example, by now our accounting employee has gotten quite a bit of information about this accounting system. At his monthly professional meeting, he's talked to employees in other corporations who are using the system. As he goes about his current work day, he sometimes imagines what a given task would be like if the new system were in place.) If the Blackbox is judged to be feasible in the individual's own circumstances, he may move to the next stage.

4. <u>Hands-on Trial</u>. Next, the potential adopter is ready to test out the Blackbox in a real or simulated work situation. Dependent on the nature of the Blackbox, this may be quite a lengthy process. (For example, our accounting employee is now given extensive training on the new system to be implemented in his department. During this period, he learns to handle problems generally like the ones in his own work situation.) If the potential adopter feels comfortable about his use of the Blackbox, he may move toward adoption.

5. <u>Adoption</u>. Finally, the potential adopter weighs the results of the hands-on trial and decides to (or not to) fully adopt the Blackbox. However, his mastery is probably imperfect and he may have problems in using it. (For example, our employee finds that, once the department has switched over to the new system, he has problems which never came up during his training period.) If the adopter receives adequate support during this phase, he will probably fully integrate the Blackbox into routine use.

FIGURE 2 ADOPTER BEHAVIORS AND RELATED STAGES

IF your potential adopter displays these kinds of behavior with regard to your Blackbox... $\longrightarrow$	THEN he is probably in this stage of adoption...
o is passive o has little information o doesn't look for information o doesn't avoid information o has little opinion	AWARENESS
o is active o expresses concern about self o asks questions that relate to Blackbox and self o begins to form opinions	SELF-CONCERN
o is active o expresses concern about use in work situation o asks questions that relate to implementation in own situation o has opinions about feasibility	MENTAL TRYOUT
o is active o is involved in learning how-to o asks questions that relate to how-to o has opinions/concerns about using	HANDS-ON TRIAL
o is active o asks questions that relate to details of implementation in own situation o indicates discouragement at own use on job	ADOPTION

WHY WORRY ABOUT ADOPTER STAGES?

As an organizational trainer, you may often deal with mandated change in procedures or products. That is, you may have adopters who have no apparent choice about a new Blackbox. They must adopt. Hence, you may well ask why you should worry about the stages that an adopter goes through. After all, he has to go, doesn't he? Although, in general, the principles of change agentry were developed with adopters who did have a choice, these principles are also useful in situations where the adopter has no apparent choice. For while it may be true that your adopter has to adopt—how fast, how well, and how agreeably he adopts is another, often costly, matter.

All people tend to resist change and to react to it with some degree of internal disorientation and upset. This is true whether or not they must ultimately accept the change. When the change desired is a small one, the degree of resistance and internal upset may also be small. But, when the change is a broadscale, expensive one with a far-reaching individual and organizational impact (e.g., computerization, new management systems, affirmative action procedures, new accountability systems), then the resistance and internal distress of employees may be sizeable. And that resistance and internal distress—if not dealt with knowledgeably—can surface in innumerable and often subtle ways, e.g., being a slow learner, being an inept or accident-prone user, being a trouble-maker. How much better—for the employee and the organization's sake—that you take the internal status of potential adopters into consideration as you plan and implement training. And that calls for strategies which match your adopter stages.

CHANGE AGENT STRATEGIES TO MATCH ADOPTER STAGES

In this section, change agent strategies for each adopter stage are suggested to facilitate the adopter's successful passage from one stage to the next. Figure 3 shows the adopter stages and matching change agent (or trainer) strategies to be emphasized at each stage.

1. For awareness—BE AN AD AGENT. If your potential adopter is in the first, passive stage of awareness, don't overwhelm him with an intensive how-to training program (a common training error). People are generally unwilling to put out much effort to learn about something they've never heard of. Instead, by an ad agent! Be short and sweet! Be positive! Hook 'em with something which appeals to their basic needs. Don't expect enthusiasm. In fact, don't expect much of anything except attention. (Imagine yourself as a TV commercial writer and think of the response you'd expect from a viewer.) The last column in Figure 3 gives some examples of what you might do for the person just entering the awareness stage.

2. For self-concern—BE A COUNSELOR. If your potential adopter is now aware of your Blackbox and beginning actively to search for information, then the time has come to be an available, kindly counselor—one who elicits concerns, who listens, who offers reliable information when it's available and empathy when it's not. Time spent in

FIGURE 3 ADOPTER STAGES AND CHANGE AGENT STRATEGIES

IF your adopter is in this stage... →	THEN your strategy should be that of... →	AND some activities might include...
AWARENESS	AD AGENT	o written memos that are short, clear, positive, realistic, relevant to their needs o positive posters o spot announcements in newsletter, on intercom
SELF-CONCERN	COUNSELOR	o individual interviews o written answers to common questions about innovation (mock Q-A session) o group discussion, with informed, non-defensive expert o hot-line
MENTAL TRYOUT	DEMONSTRATOR	o demonstration by successful adopter o case study of successful adopter o site visit to successful adopter o videotape, audiotape of successful adopter
HANDS-ON TRIAL	INSTRUCTOR	o this is your ball park
ADOPTION	TECHNICAL ASSISTANT	o be available to solve small problems (give phone number, etc.) o spot visits to support, advise o give positive publicity re adoption efforts o inform superiors of positive use

identifying the kinds of personal concerns which your Blackbox tends to generate is time well spent. Interview a sample of your adopter group; interview users of the Blackbox is some other locale; become knowledgeable yourself about your Blackbox. And—most of all—accept the fact that it's natural to worry about oneself first and foremost. Only after personal concerns are laid to rest can the potential adopter move on to worry about the Blackbox itself and its use in the work environment.

3. For mental tryout—BE A DEMONSTRATOR. It is in this stage that the adopter begins to imagine what the Blackbox would be like in his own work situation. This is the time to demonstrate how well the Blackbox works in other situations, as much like his as possible. If your adopter is in a small corporation, don't show him a successful use in a giant corporation. He'll say, "Oh, sure, it'll work for them. Look at all their resources. But, what about us? We don't have their facilities." This is an excellent time for a visit to a successful adoption site, for a mediated testimonial (videotape of successful use, audiotape of users, etc.), or for an informal presentation by experts or past adopters. Such experiences may reveal past problems with the Blackbox but should also reveal solutions and current satisfactions.

4. For hands-on trial—BE AN INSTRUCTOR. If your potential adopter—through mental tryout—has found your Blackbox feasible in his own situation, then he is ready for a hands-on trial. And, now you come into your own as a trainer. Now you can instruct the adopter. Note that in the preceding stage, the adopter was saying, "Show me that it works." Now, he is saying, "Teach me how to use it myself." And, since teaching is the business of trainers, and you are the experts, we won't go into that here.

5. For adoption—BE A TECHNICAL ASSISTANT. If your potential adopter has learned how to use the Blackbox, if he feels a sense of "I can do it," then he may well move to the adoption stage. But, since he's still a novice, he may need help — technical assistance — if he is not even now to reject the Blackbox. When results are not quite those expected or desired, the adopter needs a ready support — information, additional training, personal encouragement. And if you want this adopter to continue to be positive about new ways to do things, you should also provide (or arrange for others to provide) recognition and reward for his effort. Why should he change if no one cares?

HAZARDOUS TRAINER BEHAVIOR

If all of the above are ways the trainer should behave, then these are ways the trainer should not behave:

o Don't skip stages. Even though some stages (e.g., mental tryout) are hard to observe, assume each stage is necessary and provide for it. Perhaps the most common error which trainers make is to provide hands-on instruction too soon.

o Don't change the order of stages. Even though a learner may cycle among stages (e.g., vacillating between mental tryout and hands-on trial), don't assume you can force the learner to a later stage without first dealing with an earlier one.

o <u>Don't hurry through stages</u>. With the full realization that the constraints of a training situation may require you to move faster than is optimally effective, at least don't hurry more than you really have to. Even a short time at the beginning of a training program — spent on an awareness activity and the expression of concerns — may have a significant effect on potential adopters.

ADOPTERS AS A GROUP

Up to now, we've been talking about an individual learner — one who must go through a number of adopter stages. Now, let's look at the whole group of adopters. If you do the best possible job of providing appropriate activities for each adopter stage, can you assume that all of your learners will pass through the stages simultaneously? Sorry, but it's unlikely.

FIGURE 4

INNOVATORS   MOST ADOPTERS   LAGGARDS
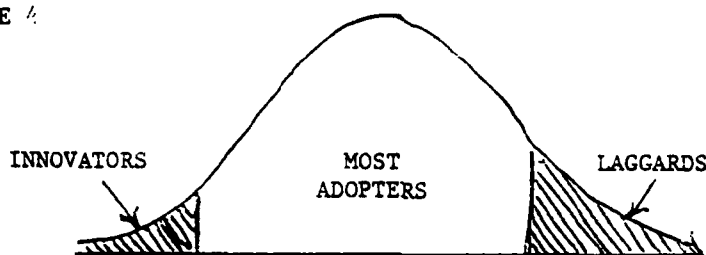
Even though all individuals need to go through the same stages of adoption, they tend to do so at different rates. In Figure 4, the horizontal axis represents time — the time it takes for an entire group of people to adopt a particular Blackbox. The vertical axis is the number of people who adopt the innovation at any given point in time. The shape of the curve, which has been repeatedly verified by actual data, shows that a few people are very quick to adopt (left end of curve). This small group is labeled <u>innovators</u>, "the first by which the new is tried." They are often viewed as odd-balls by the rest of the group. A few people are <u>laggards</u>, "the last to lay the old aside." (right end of the curve.)

ADOPTERS WORTH IDENTIFYING

"Most adopters" fall into the large middle group, neither the first nor the last to adopt. However, even within this large group, some people adopt sooner than others, in fact, some adopt shortly after the innovators adopt. It is in this group of early "most adopters" that a few people—who are very significant to the adoption effort—may be found. These are the opinion leaders (see Figure 5).

Havelock says,

> Opinion leaders...are certain influential people
> who are held in high esteem by the great majority of
> their fellow men...They watch the innovator to see how
> the idea works, and they watch the resister (laggard)
> to test the social risks of adopting the idea.
> Indeed, in many cases they are eager to observe these
> changes because their continuance in power rests upon
> their ability to judge innovations. They want to be
> champions of the innovation whose time has come. In
> other words, they must be able to adopt new ideas at
> the point at which those new ideas become popularly
> feasible. (p. 120)

FIGURE 5
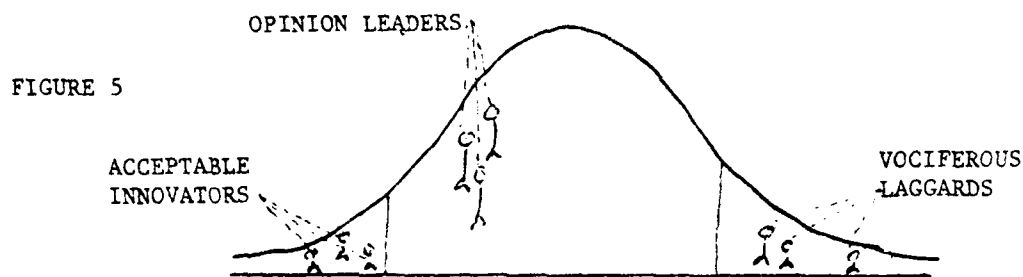
In addition, certain innovators and laggards can also be helpful.
While innovators often lack close ties to their peers and may have "stood
up too often for lost causes," if you can identify acceptable innovators,
that is, innovators who are acceptable to the rest of the adopter group,
they can become invaluable assets—namely, demonstrators of the
innovation. Also, if you can identify the vociferous laggards, two
benefits can accrue: (a) you may determine objections to the innovation
which are valid and which, in any event may become the basis for much
"bad-mouthing" on the part of the laggards, and (b) you may be able to
de-fuse the negative attitudes of some laggards. In short, you can use
acceptable innovators and vociferous laggards to further your adoption
cause.

If you realize that variation in rate of adoption is the nature of a
group of human beings as they change, then you need not heap condemnations
on yourself, your training, or your learners. Also, by identifying
sub-groups of learners in various stages of adoption, you can better plan
an individualized training program. However, any effective implementation
plan must take into consideration the critical attributes of the Blackbox.

BLACKBOX

In training as well as other change situations, Blackboxes differ across a number of dimensions which can have an impact on the ease with which people adopt them. For you to design optimally effective and efficient training and implementation strategies, you should consider certain characteristics of your Blackbox:

Simplicity. Easy-to-understand and easy-to-use innovations are adopted more rapidly than hard-to-understand and hard-to-use innovations. (Example: a new screwdriver vs. a new computer)

Visibility. An innovation which is easy to see — and which produces results which are easy to see — is more readily adopted than one which is less visible. (Example: a new piece of audiovisual equipment vs. a new performance appraisal procedure)

Divisibility. An innovation which can be tried on a small scale or on a temporary basis is more readily adopted than one which must be adopted on an all-or-none basis. (Example: a new marketing strategy which can be tried in a single store and a new marketing strategy which requires nationwide saturation to be tested)

Compatibility. An innovation that is consistent with existent practice and values will be more readily adopted than one which represents a radical change from traditional approaches. (Example: a new executive dictating device for transmittal to a secretary vs. a new executive computerized communication console for use by the CEO himself)

Cost. Expensive innovations are more slowly adopted than inexpensive innovations. However, regardless of the expense, innovations that have either a high or a quick payoff are more rapidly adopted than those which have a low or a slow payoff. (Example: a new artificial heart which, although very expensive, can, if implanted, save a life vs. a new heart monitoring system which can provide very valuable information for saving lives over a period of years)

CHANGE AGENT STRATEGIES TO MATCH BLACKBOX CHARACTERISTICS

At least two reasons exist for analyzing your Blackbox. If you foresee problems which may occur because of certain Blackbox characteristics, (a) you will be better prepared to deal with Adopter concerns and (b) you may be able to introduce the B in a way which eliminates or reduces real or potential problems.

In short, if you can't change the B situation, prepare for it. If you can change it, do so. Figure 6 provides some suggestions.

FIGURE 6   STRATEGIES TO TRY WHEN YOUR BLACKBOX HAS PROBLEMS

CHARACTERISTICS	IF your Blackbox has these problems... $\rightarrow$	THEN try one of these strategies
SIMPLICITY	o hard to understand o hard to use	o First, be sure you yourself understand the basic aspects, advantages/disadvantages, complex aspects of your B. o Be able to give simple, bottom-line overview.
VISIBILITY	o hard/impossible to see in operation o difficult/slow to see the results of	o Try to make it "visible" through success stories-- site visits, documents, direct/mediated testi- monials
DIVISIBILITY	o thought of as all-or- nothing-at-all	o Evaluate again for possible small-scale tryout o Evaluate again for possible temporary tryout
COMPATIBILITY	o generally thought of as brand new,not like anything A is doing now o generally thought of as in conflict with currently held values	o Evaluate again to see if some aspects are not more like than different from present practices. Build on similarities. o Try to identify values which match old to new.
COST	o expensive to try out o expensive to implement o thought of as slow or low in payoff	o Be ready with cost-effective- ness figures. o Be able to realistically document costs. o Emphasize qny aspects which provide either quick or high payoff.

IF your B has characteristics which make it difficult to implement and which do
not lend themselves to any of the above suggestions, your best strategy may be
to know what the major objections and concerns are likely to be, to be ready
to acknowledge these and respect those sharp enough to point them out. If your
B is worthy, counter with its advantages and keep on truckin.'

TIME TO CHANGE

It takes time to change, to adopt new ways of doing things. No matter how impressive your Blackbox or training program is, your learners have to go through the same adoption process which you yourself go through as you learn about a new topic, even the topic of your own training. On the day you first offer a training session, you and your learners are likely to be a radically different stages of adoption. You have spent a great deal of time with the training topic. You have passed through the stages of Awareness, Self-Concern, and Mental Tryout. In one way or another, you've probably had extensive Instruction. In fact, you are probably in the stage of Adoption. And you've dealt — one way or another — with the characteristics of the Blackbox which are likely to cause trouble. On the other hand, your learners may not even know the topic of today's training services. Plan for optimal training effectiveness. Be a change agent! (Figure 7 offers a simple flow-chart for analyzing one of your training situations.)

FIGURE 7
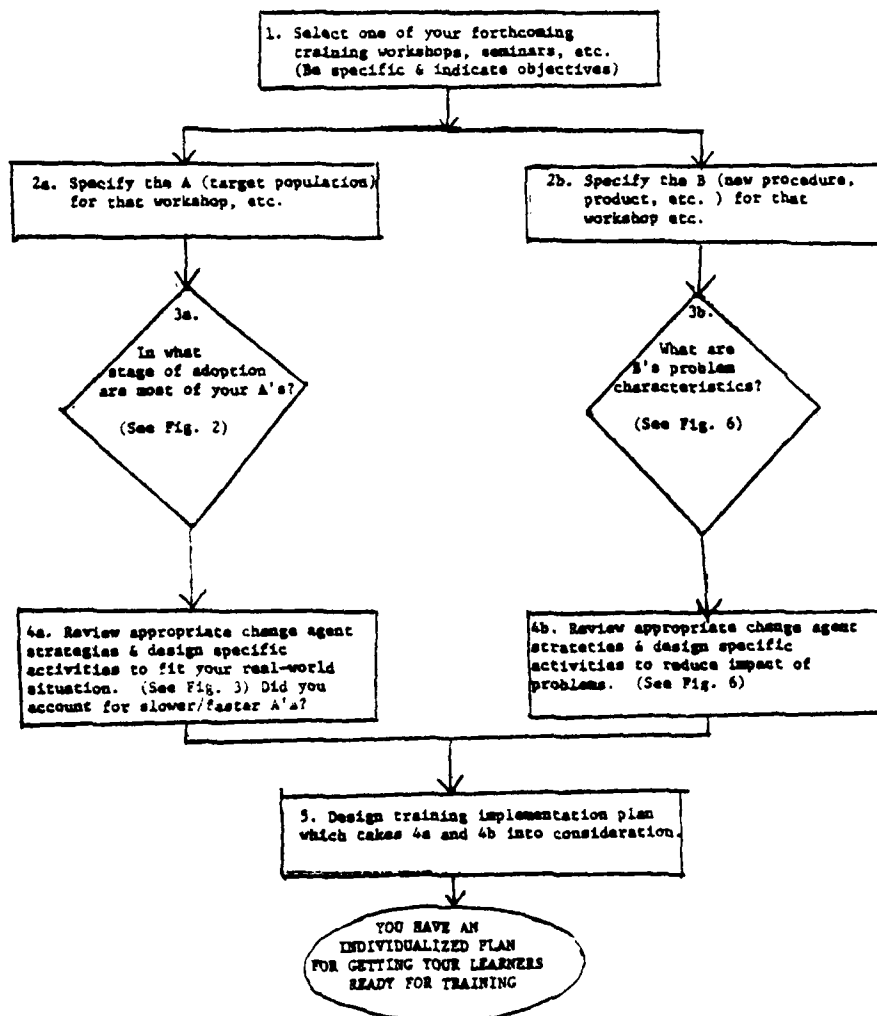
DOMAIN

In addition to specifying who the Adopters are and what the nature of the Blackbox is, if you are to work effectively as a change agent, you need to understand the adoption Domain. Adopters, Blackboxes, and Change Agents do not exist in isolation. They exist within some other, larger Domain which itself has a potential influence on adoption. Regardless of what it is, such an entity can be thought of as having its own personality with regard to change — its own climate of change. This climate involves such factors as the communication flow, decision making procedures, level of mutual trust and reward system. An "open" climate is characterized by honesty, openness, flexibility, a sense of group membership, mutual respect, low threat, and the like. A "closed" climate lacks these characteristics. Use Figure 8 to assess the climate of change in your own Domain.

FIGURE 8

ASSESSING THE CLIMATE OF CHANGE

	almost always	usually	not usually	almost never
1. Are all personnel involved in a project included in the decision-making process?	( )	( )	( )	( )
2. Do people feel free to question the established way of doing things?	( )	( )	( )	( )
3. Are conflicts openly discussed and considered normal for an organization?	( )	( )	( )	( )
4. Are people encouraged to keep informed about innovative policies and practices?	( )	( )	( )	( )
5. Are people rewarded for being innovative?	( )	( )	( )	( )
6. Is there openness and trust in communications among personnel?	( )	( )	( )	( )
7. Do ideas from all people receive a fair hearing?	( )	( )	( )	( )

Obviously if all of your answers tended to be toward the right, the change effort will be difficult in your Domain. Nevertheless, if you want to survive (if not thrive) as a change agent, you need to face reality. If the Domain is resistant to change, you're better off to know and plan for that situation.

The Domain includes everything which is relevant to the adoption
effort — the people, policies, money, resources, facilities, equipment,
values, laws, etc. In Figure 9, <u>an example from education</u> shows a sample
Domain for a particular change situation in which the Blackbox was the
mainstreaming of handicapped childeren into the regular classroom. The
Adopters here are third grade teachers. Various other factors thought to
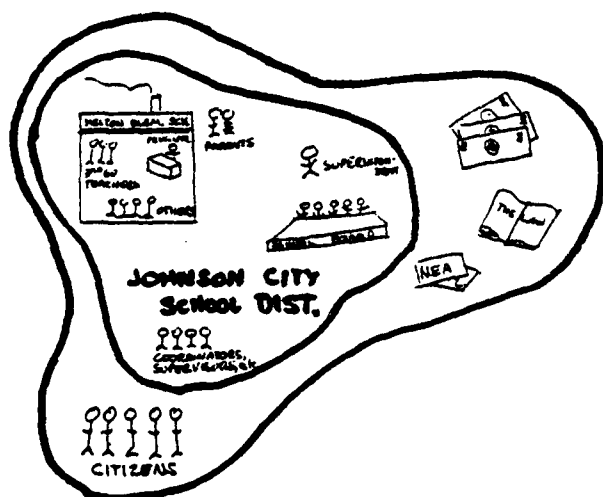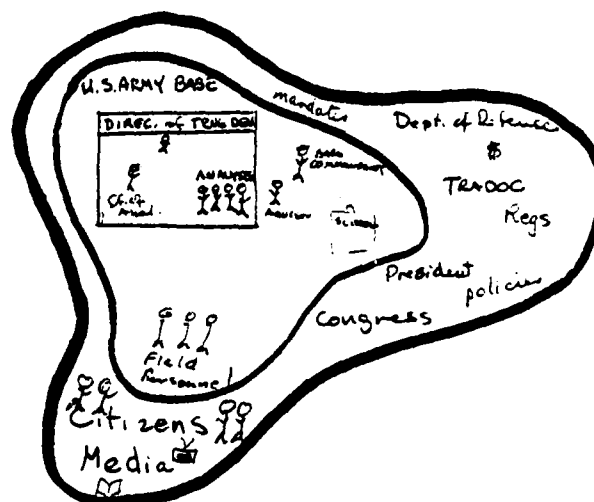be significant to the adoption process are indicated.

FIGURE 9

FIGURE 10

Another sample Domain is shown in Figure 10. Here, the Blackbox is
the application of analysis procedures specified by the Training
Development Institute of the <u>U.S. Army</u>. The Adopters are the analysts who
exist at each of the U.S. Army Service Schools on certain U.S. Army bases.
A variety of possible factors which might be significant to the full
adoption and implementation of this Blackbox by these Adopters is shown.

As indicated in the two figures above, one way to think about the Domain is in a three-level way, with each level embedded in th one outside. The first level (the most central one) is the organi; ional unit in which the Adopters work on a day-by-day basis. This is the unit within which the Blackbox must be supported if it is to be fully adopted. In the education example above, the organizational unit was a single school. In the military example, the organizational unit was the Directorate of Training Development. (On some bases, the analysts' organizational unit might be smaller, for example, a Division within DID.)

The second level is larger and its definition is more arbitrary. In fact, if the system is simple enough, this level can be eliminated. However, in the education example above, the second level was specified by the change agent as the Johnson City School District. And, in the military example, this level was specified as the U.S. Army Base. In both cases, the choice of the change agent was probably determined by (a) the formal organization of the system and (b) the change agent's information and perceived access to the system.

The third level is, in effect, the rest of the relevant world.

PEOPLE FACTORS

The Domain can also be divided into people factors and non-people factors. The people who may be significant factors in any adoption effort — key personnel — can often be identified by simply looking at a formal organizational chart. Figure 11 is a simulated organizational chart of a U.S. Army Base. The analysts (the Adopters) are indicated in the black box. Likely nominees for key personnel are underlined. Such formal leaders can block or facilitate adoption efforts.

FIGURE 11
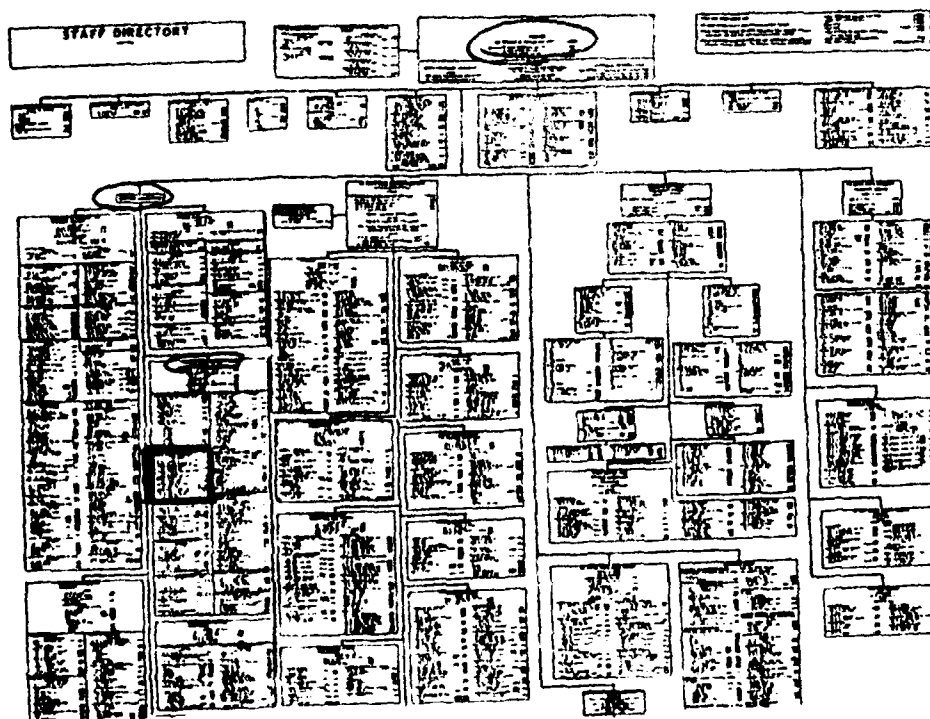
In addition to formal leaders, it is important to identify two other classes of key personnel. One group consists of the gatekeepers. Unlike formal leaders, these people have no direct power. However, because they are located strategically, they can block communications, as well as access to people and to facilities. For example, a general's secretary can, through a wide variety of dodges, keep you from getting an appointment. A janitor can lock the meeting room door.

Another group of potentially key people are those in the informal network. If you have targeted a person who is critical to your adoption efforts, you can benefit by analyzing the informal network to which the person belongs. For example, if you see a particular chief executive officer (CEO) as highly significant to your adoption effort, you may want to look at how information flows to him through his informal network. Here are some possible network paths.

Expected informal paths within the formal organization. For example, the CEO plays golf with your boss every Wednesday. Both people are in the formal organization and have a formal communication. But they also have an informal system. You might find a Wednesday pre-lunch conversation with your boss to be the quickest way to get the information to the CEO.

Unexpected informal paths within the formal organization. If the CEO goes fishing every weekend with the janitor, you'd better get to know the janitor. If the CEO is dating your secretary, you'd better be aware of it.

Informal paths that have connections outside the formal organization. The CEO never sees your boss, but his wife belongs to the same club that your boss's wife belongs to. Such a channel may be chancy for the delivery of good news, but it's a great way to get your foot in if you tell your boss some choice news about the CEO.

Informal paths entirely inside the formal organization. It would have to be an unusual and very high payoff situation for a change agent to try to use the CEO's family or friends as conduits of information.

In all of these situations, it may be very useful to know what to say, what not to say, when to say it, and . . . to whom.

NON-PEOPLE FACTORS

Non-people factors may be important at every level of the Domain.
Below are listed some examples of possible significant non-people
factors for the education and for the military situations discussed earlier.

EDUCATION --non-people factors

Level 1--Melton Elementary School
o adequacy of physical facilities of school building
o availability of resources to make needed modifications
o teacher-pupil ratio
o availability of support services

Level 2--Johnson City School District
o local teachers' union, policies and strength
o local community, homogeneity and attitudes toward social services
  and education in general
o quality of existent facilities for the handicapped
o tax base for school district
o local economy

Level 3--rest of the relevant world
o state's history/attitudes with regard to social service/education
o economy
o existent laws/regulations
o federal funds available
o federal incentives/disincentives for adoption

MILITARY --non-people factors

Level 1--Directorate of Training Development
o physical proximity of analysts to each other, to subject matter
  experts, to equipment, to documents
o quality of performance appraisal system
o quality of management
o quality/availability of training
o computerized support
o budget for field observation and data-gathering
o incentives/disincentives for adoption

Level 2--U.S. Army Base
o availability   of personnel, facilities, equipment, resources
o base history with regard to training development
o local community attitude and support

Level 3--rest of the relevant world
o Department of Defense mandates
o Presidential policies
o Congressional policies
o citizenry attitudes
o media attitudes/communiques
o world conditions
o TRADOC regulations and resource support

YOU, THE CHANGE AGENT

What kind of a person do you need to be to be effective—and to survive—
as a CHANGE AGENT?

   o You need to know your innovation.

   o You need to be sensitive to individual needs and to
     specific concerns about the innovation.

   o You need to be sensitive to the different stages people
     go through as they adopt a new procedure/product.

   o You need to be good at analyzing groups.

   o You need to utilize all available assets in your support system.

   o And, personally...

           o You need to live well with ambiguities.
           o You need to be able to accept being invisible.
           o You need a friend—outside the system.
           o You need to give yourself strokes.

_____

Re your immediate support system, that is, your Change Agentry Team—
   Q: What are your public agendas as you work with this team?

   Q: Your hidden agendas?

   Q: One by one, think about each other member of the team—What are
      his/her public agendas re this team effort?   hidden agendas?

   Q: What techniques do you have for giving yourself strokes?

   Q: Who is your friend? (a person outside the system whom you can
      occasionally unload on? who will understand you don't mean
      everything you say negative forever? who may have wise suggestions,
      but who will definitely have sympathy?)

BASIC PRINCIPLES OF CHANGE AGENTRY

1. Worthwhile innovations* seldom succeed just because they are worthwhile.

2. Change—or the adoption of an innovation—is not an event. It is a process.

3. Institutions don't adopt. People adopt—one by one.

4. People are slow to change—especially if the innovation is complex, incompatible with past practice, irreversible, costly, and so forth.

5. People go through predictable stages as they move toward the adoption of something new. You can help or hinder this process.

6. People have their own views and concerns about anything new. It is very difficult and, if you are to facilitate change, very important to understand the other person's view and concerns about an innovation.

7. People exist in a social system which has an impact on if-and-when they adopt an innovation.

8. Even when change is mandated, coercion presents problems and is less reliable than commitment.

* Innovation means a new procedure, system, product, piece of equipment, etc.

INCL 17a

MATCHING

ADOPTER STAGE ——————— to ——————— CHANGE AGENT STRATEGY

| If your potential adopter displays these kinds of behavior...	THEN s/he is probably in this stage of adoption...	AND the appropriate role for you to play is...	WITH activities which...
o is passive o has little information about the Blackbox o doesn't look for information o has little or no opinion about B	AWARENESS	AD AGENT	o get attention o are brief o are positive o appeal to the needs of the adopter
o is active o expresses concern about self with regard to B o asks questions that relate to self and B o begins to form opinions	SELF-CONCERN	GUIDE/LINKER	o identify adopter concerns o answer questions o provide relevant information o respond realistically o promote group discussion
o is active o expresses concern about use in work situation o asks questions that relate ti implementation in own situation o has opinions about feasibility	MENTAL TRYOUT	DEMONSTRATOR	o provide a relevant example o promote discussion with satisfied peer adopters o simulate adopter's own situation
o is active o is involved in learning how-to o asks questions that relate to how-to o has opinions/concerns about using	TRIAL/TESTING	TRAINER/INSTRUCTOR	o train in skills/knowledge o provide feedback o reinforce/support
o is active o asks questions that relate to details of implementation o integrates into work routine	ADOPTION	TECHNICAL ASSISTANT	o maintain contact with adopter o link adopter with follow-up resources o provide support to adopter o provide recognition to adopter

DORMANT & ASSOCIATES, INC.
4412 E. TRAILRIDGE ROAD
BLOOMINGTON, IN 47401
812/333-2808

Incl 17b
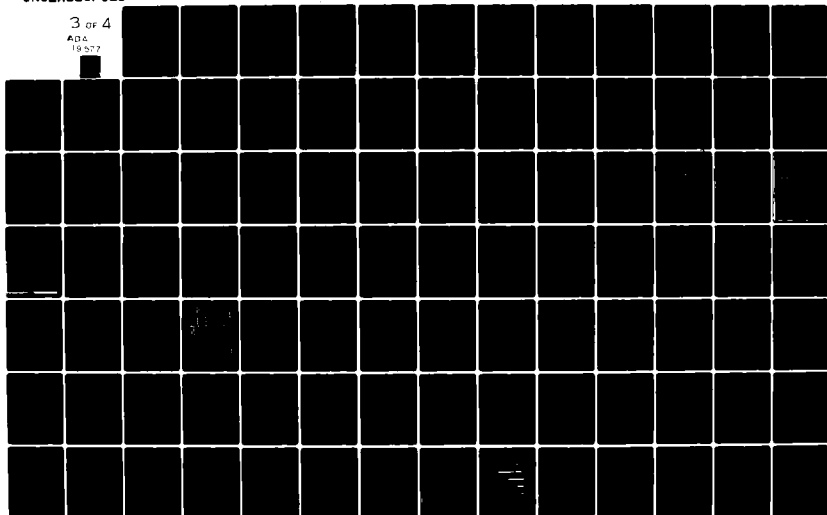
SPECIALTY CODE 28/54

- WHERE WE'VE BEEN
- WHERE WE ARE
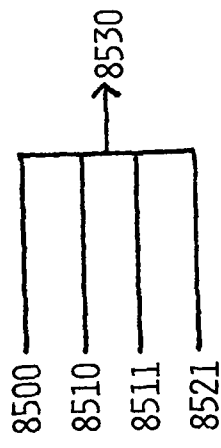- WHERE WE'RE GOING

INCL 18

BEGINNING OF THE PROBLEM

8500 PICTORIAL UNIT CDR

8510 PICTORIAL OFFICER

8511 MOTION PICTURE & TV DIRECTOR

8521 MOTION PICTURE OR TV WRITER

ADDITIONAL SPECIALTY ADDED

8530 AUDIO-VISUAL INSTRUCTIONAL TECHNOLOGIST

8500 ─────┐
8510 ─────┼──→ 8530
8511 ─────┤
8521 ─────┘

THIS WAS THE FIRST MISMATCH

1975 = OPMS

MOS 8530 BECAME OPMS 28 WITH SSI'S

28A AUDIO-VISUAL INSTRUCTIONAL TECH OFFICER

28B AUDIO-VISUAL OFFICER

28C AUDIO-VISUAL PRODUCTION OFFICER

PROGRESSION WAS FROM 28C TO 28A

1976 = OPMS 28

OPMS 28 RESTRUCTURED FUNCTIONALLY TO
ADDRESS THE TRADOC SCHOOL NEEDS.

- INSTRUCTIONAL MANAGER
- MEDIA PRODUCTION
- INSTRUCTIONAL TECHNOLOGIST

RESULTS

- MISCODED POSITIONS
- MALASSIGNMENTS
- LESS THAN ADEQUATE CAREER MANAGEMENT
- A CONTINUALLY GROWING AND UNFULFILLED NEED WITHIN TRADOC FOR TRAINING DEVELOPERS AND MEDIA PRODUCTION PERSONNEL

REVIEW OF EDUCATION & TRAINING FOR OFFICERS

RETO

RESULTED IN:

28A (INSTRUCTIONAL MANAGEMENT) AND 28C (INSTRUCTIONAL TECHNOLOGIST) CONSOLIDATED INTO (1) SSI 28A (TRAINING DEVELOPMENT). 28B CONVERTED TO ASI 5B (AUDIO-VISUAL OFFICER).

CREDIBILITY PERCEPTIONS

- LIMITED CAREER PROSPECTS (PROMOTION)
- LIMITED JOB OPPORTUNITIES
- LACK OF COMMAND EMPHASIS

PROPONENCY RESPONSIBILITY

- CSA DIRECTED THAT SPECIALTY PROPONENCY BE MOVED FROM DA TO THE FIELD

- AR 600-101 (DRAFT)
  - COMBINED ARMS CENTER PROPONENT FOR 54
  - TRADOC (TDI) PROPONENT FOR 28

- TRADOC'S POSITION
  - SC28 REALIGN FROM TRADOC TO CAC

SC28 MERGER TO SC54

- 1981 - CAC PROPOSED MERGER

  - SC54 WOULD BECOME (OPNS PLANS TNG)

- 1982 - HQDA APPROVED CAC'S PROPOSAL

  - SC28 ELIMINATED

  - SC54 (OPNS, PLANS, TNG & FORCE DEV)

  - REMOVAL OF SSI 54B FROM SC54

  - SSI 54C EXPANDED TO INCLUDE ASI 7X
    (MANPOWER MANAGEMENT)

  - ASI 7Y (COMBAT DEVELOPMENT)

  - ASI 7Q (TRAINING DEVELOPMENT)

ASI 7Q (PROPOSED)

TRAINING DEVELOPMENTS (TD)

FUNCTIONAL COURSE

● TD WILL BE AN ASI WHEN SC 28 AND SC 54 MERGER IS COMPLETED (6-5 ... .
  IMPLEMENTATION)

● TD FUNCTIONAL COURSE IS BEING DEVELOPED BY TDI IN CONJUNCTION ... ...
  MIDDLE MANAGERS COURSE (MMC)

● COURSE WILL INCLUDE:
  CORE "GENERIC" TRAINING/TD SKILLS

  PRESCRIPTIVE TD SKILLS (HOW-TO)

    * EVALUATION

    * ANALYSIS

    * DESIGN

    * DEVELOPMENT

    * IMPLEMENTATION

● TDI-SFTD IS WORKING WITH SC 54 PROPONENT (CAC) TO BRING COURSE ...
  (PROJECTED FY 83)

EXAMPLES OF DUTY POSITIONS

TDA

- DEPUTY ASST COMDT
- DIR PLANS OPERATIONS TNG (INSTL
- DIR TRAINING (SERVICE SCH)
- DIR/CHIEF/ACTION OFF
  AT SERVICE SCH

TOE/MTOE

- ASST CHIEF OF STAFF, GS (CORPS & HIGHER)
- OPNS OFFICER (BATTALION OR HIGHER)
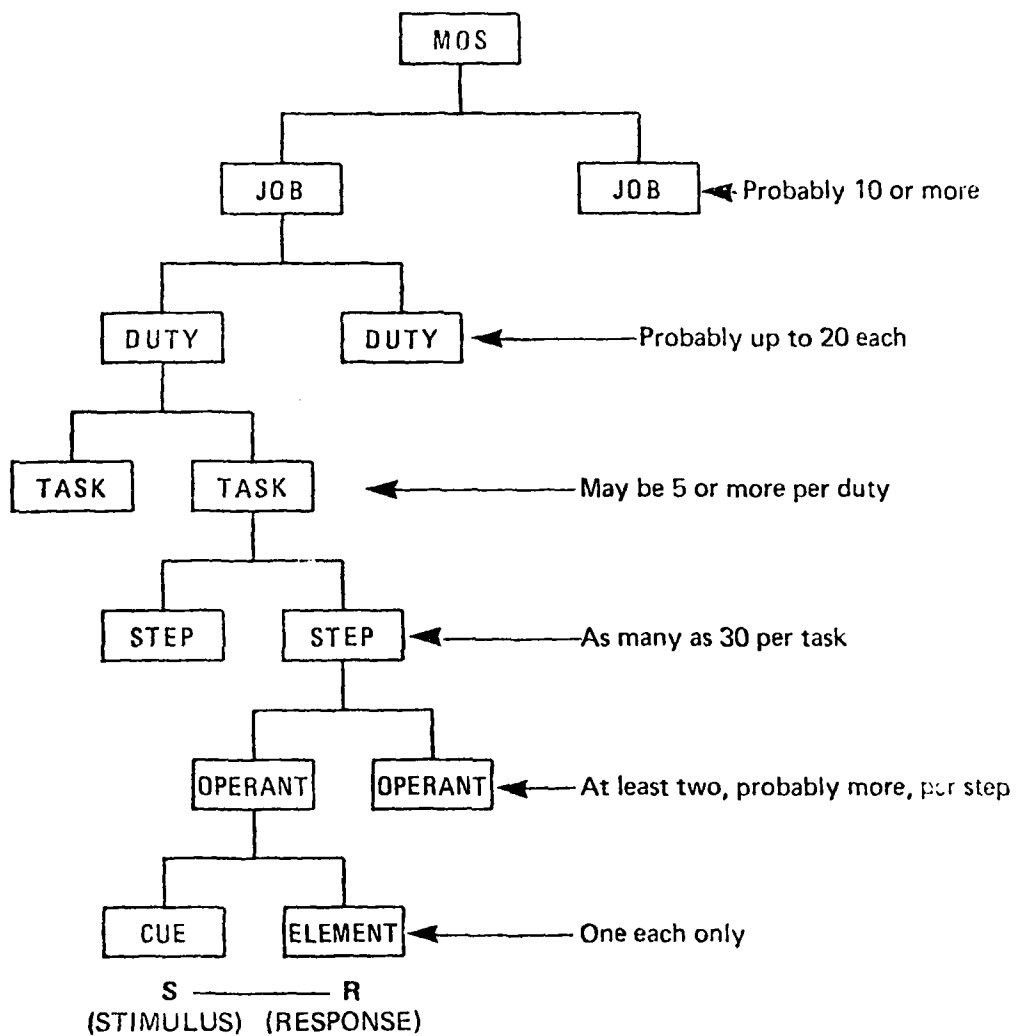- G3 PLANS OFFICER
- TNG OFFICER (DIV/CORPS)

EXAMPLES

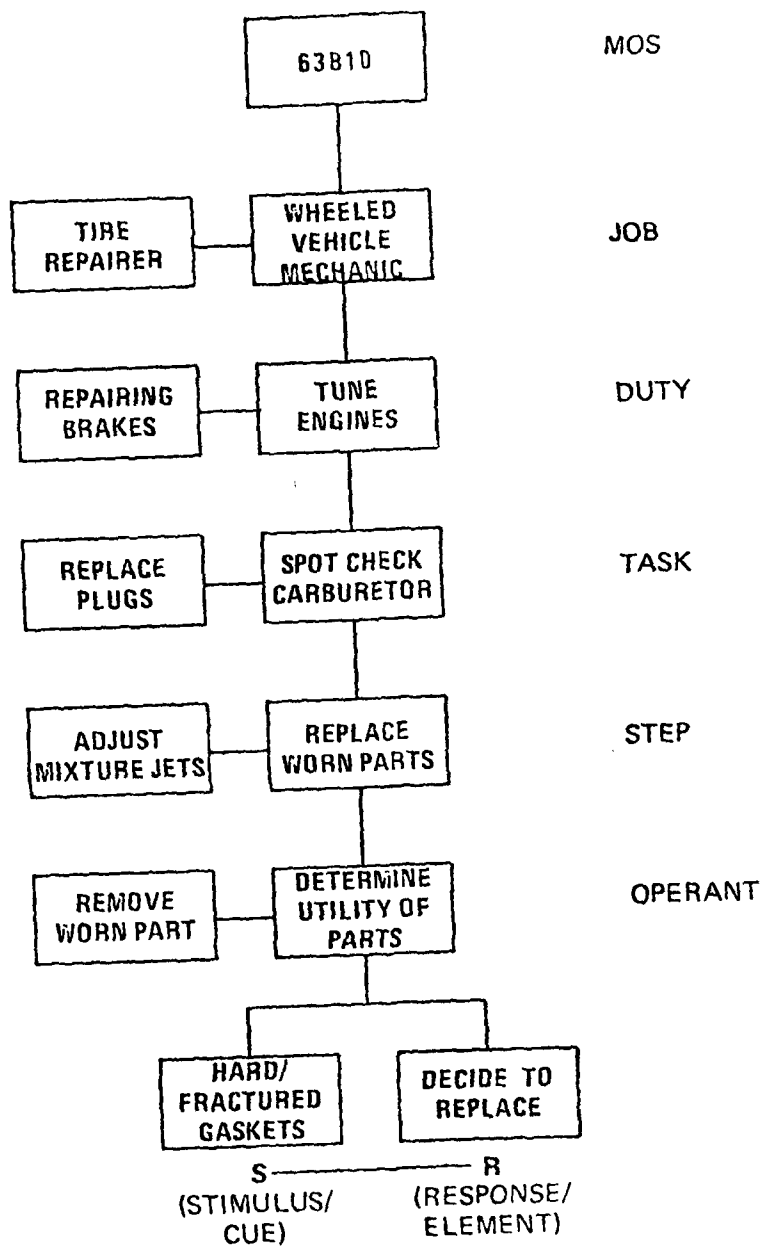| SPECIALTY		SPECIALTY	ASI
11A		92A (MAT SERV MGT)	7Q
14A		54A	7Q
31A		91A (MAINT MGT)	7Q
92A (MAT SERV MGT)		54A	7Q
92A		91A	7Q

GOALS

BASED UPON COMMENTS FROM THE FIELD AND
PAST EXPERIENCE INSURE THE PRODUCTION
OF AN EQUITABLE AND QUALITY SC AND ASI
PROGRAM THAT WILL ENHANCE THE CREDITABILITY
OF TRAINING DEVELOPMENTS.

LEVELS OF PERFORMANCE

(MILITARY)

```
                        ┌───────┐
                        │  MOS  │
                        └───┬───┘
              ┌─────────────┴─────────────┐
          ┌───┴───┐                    ┌───┴───┐
          │  JOB  │                    │  JOB  │◄── Probably 10 or more
          └───┬───┘                    └───────┘
       ┌──────┴──────┐
   ┌───┴───┐     ┌───┴───┐
   │ DUTY  │     │ DUTY  │◄────────── Probably up to 20 each
   └───┬───┘     └───────┘
   ┌───┴───────┐
┌──┴───┐   ┌───┴───┐
│ TASK │   │ TASK  │◄────────── May be 5 or more per duty
└──────┘   └───┬───┘
        ┌──────┴──────┐
    ┌───┴───┐     ┌────┴───┐
    │ STEP  │     │  STEP  │◄────────── As many as 30 per task
    └───────┘     └────┬───┘
              ┌────────┴────────┐
         ┌────┴─────┐     ┌──────┴───┐
         │ OPERANT  │     │ OPERANT  │◄──── At least two, probably more, per step
         └────┬─────┘     └──────────┘
        ┌─────┴─────┐
    ┌───┴───┐   ┌───┴─────┐
    │  CUE  │   │ ELEMENT │◄────────── One each only
    └───────┘   └─────────┘
      S ──────────── R
  (STIMULUS)  (RESPONSE)
```
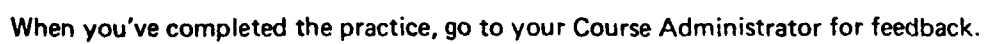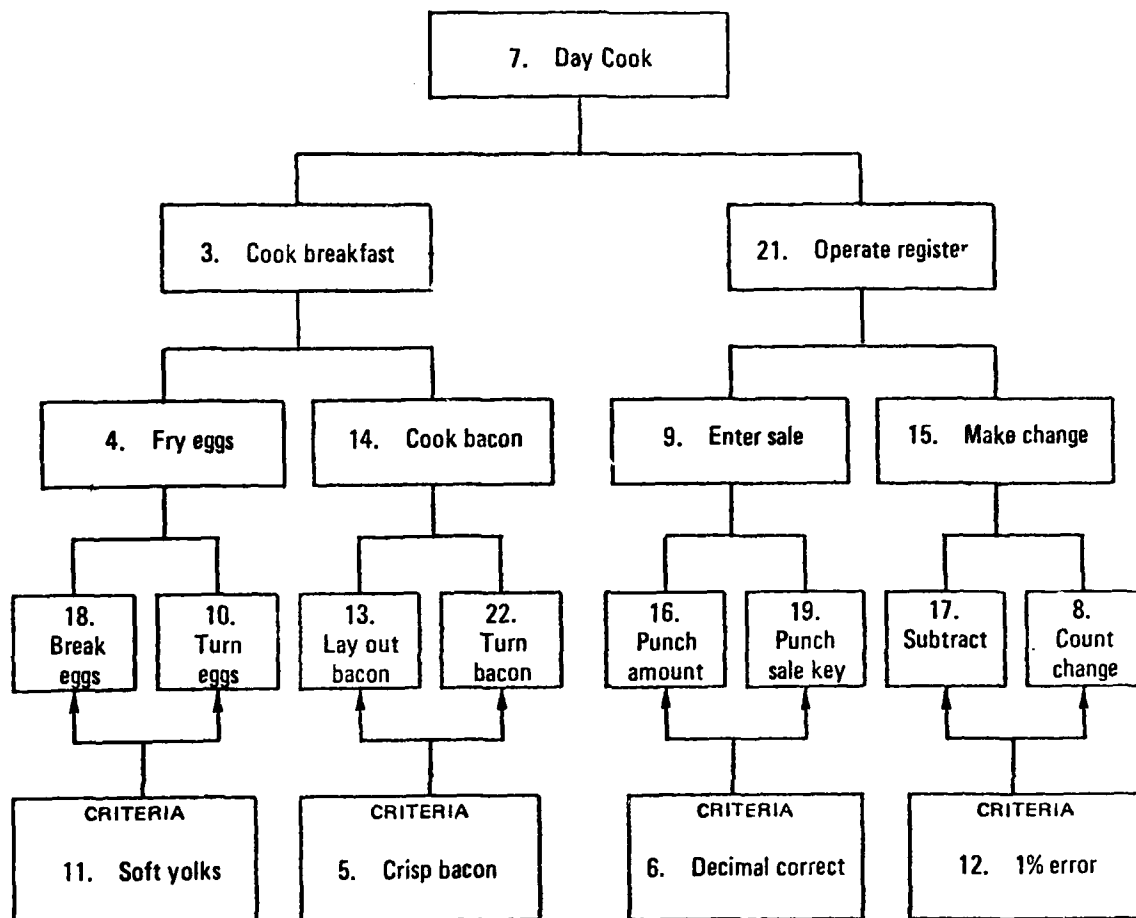
INCL 19

TYPICAL MILITARY PERFORMANCE HIERARCHY

63B10	MOS
TIRE REPAIRER — WHEELED VEHICLE MECHANIC	JOB
REPAIRING BRAKES — TUNE ENGINES	DUTY
REPLACE PLUGS — SPOT CHECK CARBURETOR	TASK
ADJUST MIXTURE JETS — REPLACE WORN PARTS	STEP
REMOVE WORN PART — DETERMINE UTILITY OF PARTS	OPERANT

HARD/FRACTURED GASKETS   DECIDE TO REPLACE

S————————R
(STIMULUS/CUE)   (RESPONSE/ELEMENT)

Part B

On the next page is a diagram. Use it to arrange the performance increments in a hierarchy of general-to-specific. Also, write the criteria in the boxes at the bottom.

Performance Increments

1. Motivated to have proper attitude.
2. Knows how to subtract.
3. Cook breakfast.
4. Fry eggs.
5. Bacon must be crisp.
6. Decimal in correct place.
7. Day-shift Cook.
8. Count change to customer.
9. Enter the sale on the cash register.
10. Turn eggs.
11. Yolks are soft, whites solid, no shells.
12. No more than 1% error in cash vs sales at end of day.
13. Lay out bacon on grill.
14. Cook bacon.
15. Make change.
16. Punch amount of money on register.
17. Subtract sale amount from cash given by customer.
18. Break eggs onto griddle.
19. Punch sale key.
20. Appreciates importance of good service.
21. Operate cash register.
22. Turn bacon.
23. Understands operation of cooking breakfast.

(

(

CRITERIA   CRITERIA   CRITERIA   CRITERIA

When you've completed the practice, go to your Course Administrator for feedback.

```
                        ┌─────────────────────┐
                        │   7.   Day Cook     │
                        └──────────┬──────────┘
                 ┌─────────────────┴─────────────────┐
      ┌──────────────────────┐          ┌──────────────────────────┐
      │  3.  Cook breakfast  │          │  21.  Operate register   │
      └──────────┬───────────┘          └────────────┬─────────────┘
          ┌──────┴──────┐                       ┌─────┴──────┐
  ┌──────────────┐ ┌──────────────┐     ┌──────────────┐ ┌──────────────┐
  │  4.  Fry eggs│ │14.  Cook bacon│    │  9. Enter sale│ │15. Make change│
  └──────┬───────┘ └──────┬───────┘     └──────┬───────┘ └──────┬───────┘
     ┌───┴───┐        ┌───┴───┐            ┌───┴───┐        ┌───┴───┐
  ┌──────┐┌──────┐ ┌──────┐┌──────┐    ┌──────┐┌──────┐ ┌──────┐┌──────┐
  │ 18.  ││ 10.  │ │ 13.  ││ 22.  │    │ 16.  ││ 19.  │ │ 17.  ││ 8.   │
  │Break ││Turn  │ │Lay out││Turn  │   │Punch ││Punch │ │Subtract││Count│
  │eggs  ││eggs  │ │bacon ││bacon │    │amount││sale key│ │      ││change│
  └──▲───┘└──▲───┘ └──▲───┘└──▲───┘    └──▲───┘└──▲───┘ └──▲───┘└──▲───┘
     └───┬───┘        └───┬───┘            └───┬───┘        └───┬───┘
  ┌──────────────┐ ┌──────────────┐     ┌──────────────┐ ┌──────────────┐
  │  CRITERIA    │ │  CRITERIA    │     │  CRITERIA    │ │  CRITERIA    │
  │11. Soft yolks│ │5. Crisp bacon│     │6. Decimal    │ │12.  1% error │
  │              │ │              │     │   correct    │ │              │
  └──────────────┘ └──────────────┘     └──────────────┘ └──────────────┘
```

2

SAMPLE: OPERANT-LEVEL PERFORMANCE DESCRIPTION

Having been presented a request for leave (DA31) from one of your subordinates, determine whether you will recommend approval or disapproval. Base your decision on the following factors:

1. Are dates requested in conflict with mission requirements?

2. a. Does soldier have sufficient accrued leave to cover requested absence?

   b. Does solider have sufficient time remaining on active duty to accrue sufficient leave to cover the absence?

If the answer to question 1 is "Yes," recommend disapproval. If the answers to 2a and b are "No," recommend disapproval. Otherwise recommend approval.

PRACTICE EXERCISE: OPERANT-LEVEL PERFORMANCE DESCRIPTION

After recognizing the oncoming soldier as an officer, render a hand salute. First flatten the right hand, ensuring fingers and thumb are touching. Then raise the hand to the area immediately below the bill of the cap and touch the tip of the index finger to the center edge of the right eyebrow, straightening the forearm and wrist. The forearm is held at a 45° angle to the ground and upper arm.

S_1————R • S_2————R • S_3————R •

Officer | Flatten right hand. | Hand flat. | Close fingers/ thumb. | Hand flat, fingers together. | Raise hand and arm.

S_4————R • S_5————R

Hand below bill of cap.

Straighten forearm and wrist.

• S_6————R

Forearm straight.

1
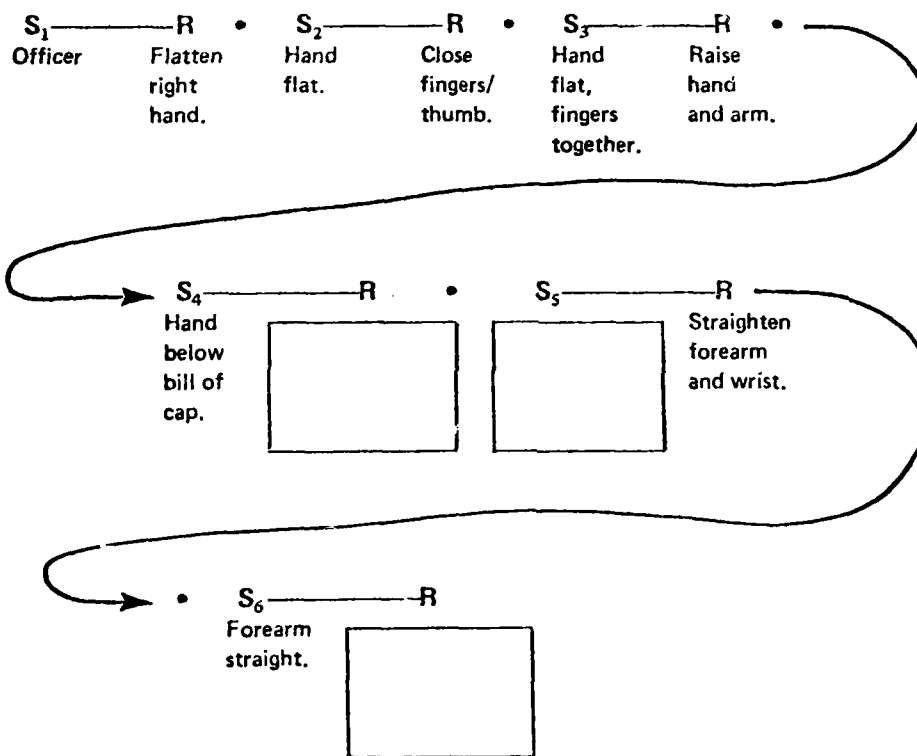
FEEDBACK to Leave Request

S_1 — DA31

R — Determine requested dates.

S_2 — Dates

R — Determine if dates are in conflict with mission.

$S_{3.1}$ Yes

R — Recommend disapproval.

$S_{3.2}$ No

R — Determine number of days accrued leave.

$S_{4.1}$ No and does not have time to accrue.

R — Recommend disapproval.

$S_{4.2}$ More than requested days.

$S_{4.3}$ No, but has sufficient time to accrue.

R — Recommend approval.

2
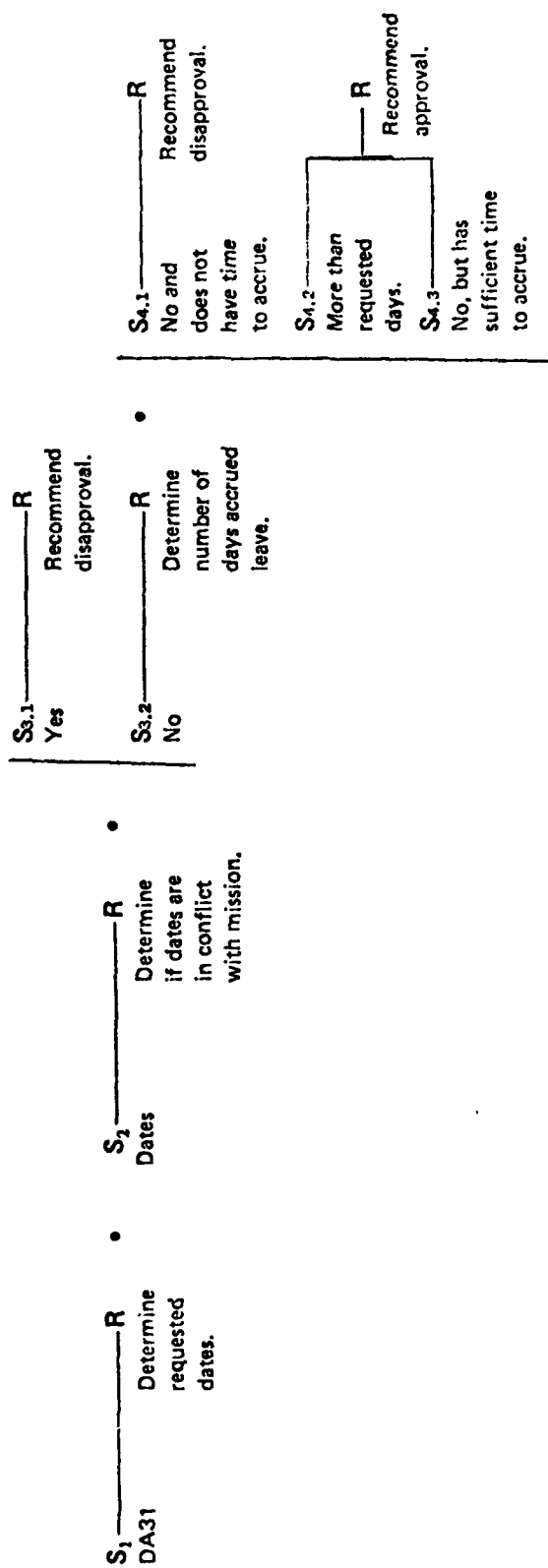
HOW TO FIX TROUBLES ON-THE-SPOT

As a rule, most of the minor troubles with the jet-injector can be repaired in the clinic situation. For the most part, the frequent troubles involve two things:

1. The liquid being injected sometimes clogs the narrow opening in the nozzle. This can be fixed quickly, and accounts for about 60% of the cases of malfunctions. (Gun will make a loud "pop" to indicate a problem.)

2. In about 30% of the cases, the cause of the trouble is a broken or loose "O" ring in the nozzle. Spare "O" rings are in the carrying case.

In about 10% of the cases, there is major trouble with the gun which can't be fixed by unclogging the nozzle or replacing the "O" ring. If the nozzle is NOT clogged, and if the "O" ring is NOT broken or loose, you must get a spare injector.

The gun will always "pop" to indicate a trouble. But you can't tell what is causing the trouble just by the sound. It may be a clogged nozzle. (If so you can see the clog by inspecting the nozzle itself - - - after screwing it off, of course, and repair it by simply unclogging with the piece of wire provided for that purpose in the carrying case.) If nozzle is not clogged, suspect that the cause is a broken or loose "O" ring. Whether it is broken or loose, simply replace the "O" ring to fix the trouble.) As said, if neither is true (no clog or no "O" ring trouble), go get another jet-injector to complete the day's injections.

S3.1 ——— **R** ●	**SC**	
Clogged	Unclog	Trouble fixed
nozzle	with wire	

S1 ——— **R** ●   **S2** ——— **R** ●   **S3.2** ——— **R** ●
Gun makes   Unscrew   Nozzle   Inspect   Nozzle   Inspect
a loud   nozzle   off   nozzle   not clogged   "O" ring
pop.   gun   for clog.

S4.1
Broken   —— **R** ●   **SC**
S4.2 ——   Replace   Trouble fixed.
Loose   "O" ring

S4.3 ——— **R** ●   **SC**
"O" ring   Go get   Trouble "fixed"
OK   spare injector   temporarily.
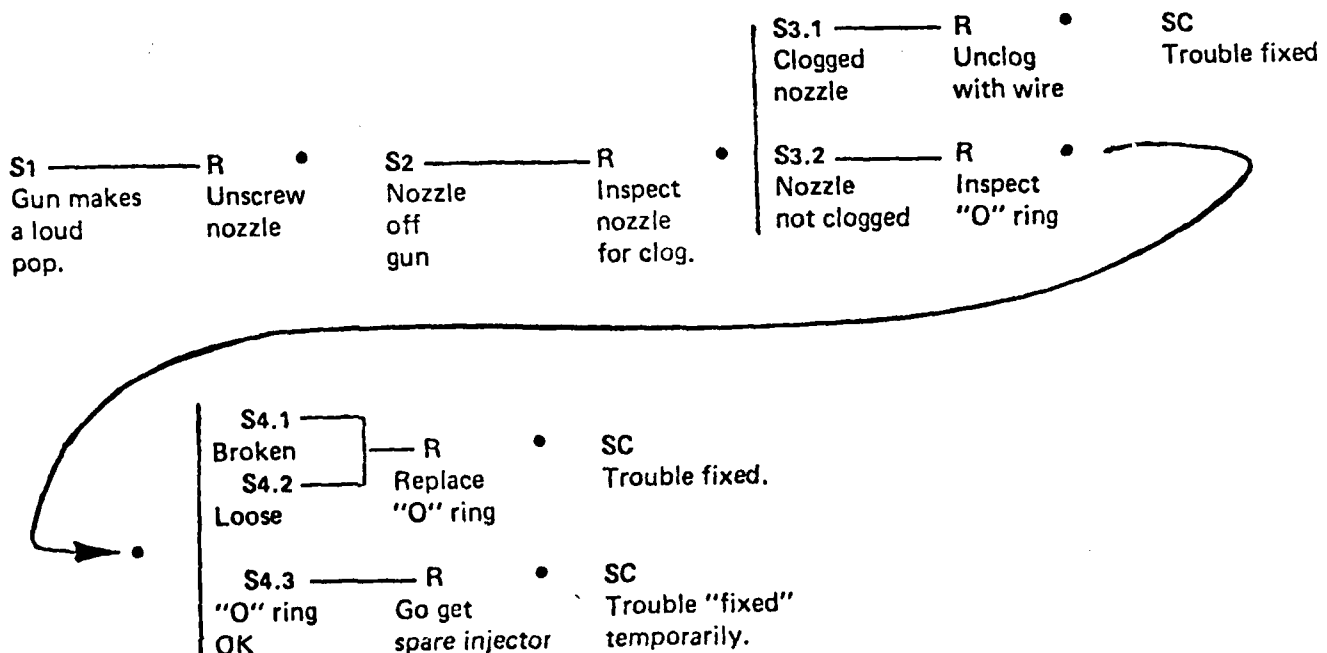
EXTENDED TASK ANALYSIS PROCEDURES(ETAP)

AN EXTENSION OF THE ISD PROCEDURAL TASK ANALYSIS PROCESS INTENDED
TO DEAL WITH THOSE TASKS WHICH WERE DIFFICULT TO PROCEDURALIZE,
REFERRED TO AS TRANSFER TASKS, SUCH AS "PERFORMANCE COUNSELING".
CONSISTS OF A HYBRID OF TWO TYPES OF ANALYSIS; HIERARCHICAL
ANALYSIS AND INFORMATION PROCESSING ANALYSIS. BY COMBINING THESE
THE PROCESS IDENTIFIES THE COMPONENT SKILLS AND KNOWLEDGES WHICH
MUST BE TAUGHT IF THE WHOLE TASK IS TO BE MASTERED.

INCL 20

WHY ETAP?

WHEN ISD WAS DEVELOPED IT WAS ORIENTED TOWARD THE BIGGEST AREAS

OF PERFORMANCE IN THE ARMY. BY FAR THESE ARE PROCEDURAL TASKS;

SUCH AS ASSEMBLY OF M-16 AND CHANGING TIRES ON JEEPS. THE PROBLEM

WHICH THEN AROSE WAS WHAT TO DO WITH THE "OTHER STUFF" DONE IN

THE ARMY. OFTEN DONE BY THE MORE INFLUENTIAL MEMBERS(NCO AND OFF)

NOTE: IT IS NOT THE TOTAL ANSWER TO ALL "SOFT SKILLS" ISSUES.

HOW DEVELOPED

ETAP WAS ORIGINATED BY THE ORIGINAL AUTHOR OF ISD DURING THE
TRADOC SOFT SKILL SYNPOSIUM. THE FINAL DEVELOPMENT WAS ACCOMPLISHED
BY CONTRACT WITH FOUR CONSULTANTS FROM VARIOUS ACADEMIC AREAS. THE
ETAP ITSELF WAS DEVELOPMENTALLY FIELD TESTED THREE TIMES AT THREE
DIVERSE MILITARY INSTALLATIONS, WITH EXTENSIVE REVISION EACH TIME.

ETAP MATERIALS

THE CURRENT ETAP MATERIALS CONSIST OF A USERS MANUAL, BROKEN OUT
INTO THREE TYPES OF ETAP PROCEDURES AND FLOW CHARTS, AND A NINE
MODULE TRAINING PACKAGE, WHICH IS DESIGNED TO TRAIN THE PROCESS.
ORAD IS IN THE PROCESS OF DEVELOPING A WORKSHOP AROUND THESE
MATERIALS THAT WILL INCLUDE SEVERAL HOURS OF VIDEO TAPE EXAMPLES OF
VARIOUS ASPECTS OF THE ETAP AND INTERVIEW PROCESS.

ETAP APPLICATIONS

ETAP IS CURRENTLY BEING USED AS THE PRIMARY ANALYSIS APPROACH FOR THE MOS BASELINE SKILLS EFFORT BY RCA FOR THE ARMY. IT HAS ALSO BEEN ADOPTED FOR USE BY THE INSTITUTE FOR NUCLEAR POWER OPERATIONS FOR THE ANALYSIS OF NUCLEAR POWER PLANT CONTROL ROOM OPERATORS. SEVERAL OF THE TRADOC SCHOOLS ARE ADOPTING IT FOR THEIR OFFICER AND ENLISTED NON-PROCEDURAL JOB BEHAVIORS.

DOCUMENTATION OF TRANSFER TASKS AND SOFT SKILLS

DOCUMENTING TRANSFER TASKS AND OTHER SOFT SKILLS IS DIFFERENT THAN TASKS

BEHAVIORS FOR THESE INCLUDE INTERNAL PROCESSING AS WELL AS OBSERVABLE ACTS

STRICT TASK SUMMARY FORMAT OF ACTION, CONDITION AND STANDARD IS INCOMPLETE

TRANSFER TASKS

SITUATIONAL VARIANCE: OUTSIDE THE PERFORMERS CONTROL

PERFORMER VARIANCE: INDIVIDUAL REACTS DIFFERENTLY TO SIMILAR SITUATIONS

PROBABLISTIC OUTCOME: THE INTERACTION OF THE SV AND PV REDUCE CERTAINTY

TRAINING OF TRANSFER TASKS

BASIS OF TRAINING IS THE UNDERLYING PRINCIPLES DERIVED FROM ANALYSIS

EXAMPLES AND PRACTICAL EXERCISES CONSIST OF THE APPROPRIATE ACTION STEPS

TESTING CONSISTS OF STUDENT DEMONSTRATING HIS MASTERY THROUGH APPLICATION OF

THE PRINCIPALS ON PREVIOUSLY UNENCOUNTERED INSTANCES OF ACTIONS STEPS. THE KEY

IS THAT ONE MUST MEASURE THE OUTPUT OF THE STUDENTS PERFORMANCE AND NOT THE

OUTCOME, SOME OF WHICH HE CANNOT CONTROL.

ETAP OUTCOMES

ACTION STEPS

KNOWLEDGES(FACTS, CONCEPTS, SKILLS, RULES, ETC)

PRINCIPALS OR GENERIC SKILLS: THESE APPLY ACROSS MANY TASKS

ETAP AND INSTRUCTION

PERFORMANCE
STEPS

A C T I O N A N A L Y Z E

K N O W L E D G E A N A L Y S I S

S/K   S/K   S/K   S/K   S/K   S/K

NEEDED ON THE JOB
&
MEDIUM OF TRAINING

D E S I G N D E V E L O P

TRAINING IS IN A TASK RELEVANT WAY BUT NOT BY TASK

MODEL

```
┌──────────────┐      ┌──────────────┐      ┌──────────────┐
│  ESTABLISH   │ ───▶ │   CLASSIFY   │ ───▶ │  ESTABLISH   │ ───▶
│  OBJECTIVE   │      │  OBJECTIVE   │      │  SEGMENTS    │
│  STATEMENTS  │      │  STATEMENTS  │      │              │
└──────────────┘      └──────────────┘      └──────────────┘

┌──────────────────┐   ┌──────────────┐      ┌──────────────┐
│ COGNITIVE STYLE  │   │  DETERMINE   │      │    SELECT    │
│ ┊ LEARNER        │──▶│ INSTRUCTIONAL│ ───▶ │   MASTERY    │
│ ┊ ANALYSIS ┊     │   │   STRATEGY   │      │   SEGMENTS   │
│ KNOWLEDGE        │   │              │      │              │
│ FRAMEWORK        │   │              │      │              │
└──────────────────┘   └──────────────┘      └──────────────┘
```

INCL 21

ESTABLISH OBJECTIVE STATEMENTS	CLASSIFY OBJECTIVE STATEMENTS	ESTABLISH SEGMENTS	COGNITIVE STYLE LEARNER ANALSIS KNOWLEDGE	DETERMINE INSTRUCTIONAL STRATEGY	SELECT MASTERY SEGMENTS

COGNITIVE STYLE (CONDITIONS FAVORABLE)

A. NOVEL SITUATION - APPLY INFORMATION

B. SIMULATION

C. SYNTHESIS OF INFORMATION

D. PRACTICE EXERCISES, LESSON TEST

ESTABLISH OBJECTIVE STATEMENTS	CLASSIFY OBJECTIVE STATEMENTS	ESTABLISH SEGMENTS	COGNITIVE STYLE LEARNER ANALSIS KNOWLEDGE	DETERMINE INSTRUCTIONAL STRATEGY	SELECT MASTERY SEGMENTS

KNOWLEDGE FRAMEWORK

A. TIE INFORMATION INTO MEANINGFUL BUILDING BLOCKS

B. PRESENT INFORMATION AT APPROPRIATE TIME

C. PRESENT INFORMATION IN APPROPRIATE FORMAT

D. INDICATE AREAS OF DIFFICULTIES OF THE CONTENTS

ESTABLISH OBJECTIVE STATEMENTS	CLASSIFY OBJECTIVE STATEMENTS	ESTABLISH SEGMENTS	COGNITIVE STYLE LEARNER ANALSIS KNOWLEDGE	DETERMINE INSTRUCTIONAL STRATEGY	SELECT MASTERY SEGMENTS

LEARNER ANALYSIS

A. INTELLECTUAL ABILITIES, EDUCATIONAL BACKGROUND

B. ETHNIC BACKGROUND

C. VISUALLY ORIENTED

D. PERCEPTUAL ORGANIZATION

E. WHOLE OR PART SEQUENCING

Interactive Video Training

Interactive Training Systems

ITS

Exploring the new frontiers of educational technology, ITS has developed the state-of-the-art in interactive video systems. The ITS technology links the latest microcomputers with video tape and video disc players to create an intelligent and highly interactive training system.

While most people are familiar with computer-assisted instruction (CAI), few have experience with interactive video. The distinction between traditional CAI and interactive video is critically important and readily apparent. CAI is a text-based instructional system. Although some graphic capabilities exist in CAI, learning ultimately relies on the written word. The student is told about some problem and about its solution.

The ITS technology is an image-based system. It teaches by showing the learner the problem and relies on video demonstrations of skilled individuals doing what the learner must do.

Using ITS interactive video technology, students can simulate their way through a wide variety of training problems, ranging from technical skills training to process control and management training.

Format* Software

As is true with all computer technology, interactive video products depend on software to bring to life the potential created by particular combinations of hardware. Therefore, the ultimate success or failure of these systems rests primarily on the educational psychology implicit in the software. Most firms involved in the creation of interactive video products have followed the general approach taken by their predecessors in computer-based education, utilizing a programmed instruction design with video enhancement. This type of design allows for highly structured presentations in which the computer software largely controls the flow of events. Typically one sees "drill and practice" programs, and to the extent that simulation is possible the computer must stop the video at each choice point and ask the user to select a path from a range of possible options.

The ITS approach is quite different. We design unique types of interaction to fit particular learning problems. Format software regulates the interaction between the system and the user. Each type of Format software is designed to serve a distinctive type of learning problem, and may be classified as belonging to one of three families: recognition, inquiry, and action. Each of these is designed to match the characteristics of human information processing and implies a particular kind of interaction which can be made the basis of learning games.

* Trademark of ITS, Inc.

Recognition Format* Software

Recognition Format* software

is designed to be used in situations in which an individual must be taught to recognize some object or action that occurs on the video screen. Typically, the individual must learn to connect a set of terms or concepts with visual images. ITS' Recognition Format Software has been applied to a host of different problems, ranging from personality assessment training to armored vehicle recognition. What these problems have in common is the requirement that the learner become skilled at identifying something that must be presented in a visual mode. The Recognition Format Software developed by ITS has been designed to assist the learner in this process and has proven effective, even in the soft skill area.

* Trademark of ITS, Inc.

Inquiry Format* Software

Inquiry Format* Software has been developed to allow an individual to learn as much as s/he may need to know about a particular object, situation or process. Inquiry Format Software allows the user to stop a video presentation at any point and ask questions about what s/he has just seen and heard. These explanations can also be the hierarchical structure and the individual is free to probe into that structure to get a more detailed briefing. The system can direct particular individuals to inquire at a higher or lower level, depending on the identity of the user. The system can also perform tests of the user's knowledge that are geared to his level of penetration into the information base. Naturally, the user is free to move back to the basic map at any point and continue his training program. Thus, Inquiry Format Software allows many users to view a course of some kind and gives each a common set of basic information, allowing some to obtain deeper levels of understanding. Applications of Inquiry Format Software are particularly appropriate when a large number of individuals, varying in expertise, ability or need for detailed training, must be introduced to a new product or piece of technology.

* Trademark of ITS, inc.

Action Format* Software

Action Format* Software is the third in the group and comprises some elements from both the above families. Action Format Software has been designed to facilitate training where simulation of some process is required. These systems, developed exclusively by ITS, support learning by allowing the user to watch the video action and stop the program at any point when problems or errors in performance are detected. If the user can first find and then correct such errors, the system will automatically jump to another branch of the video plot in which that particular problem has been rectified. Thus the learner can travel along many plot routes, depending upon his ability to detect critical points, where they occur, make decisions and take appropriate actions.

Central to the power of Action Format* Software is the "discovery" mode of learning that takes place. The video need not stop to tell you to solve a problem; it is a wait for you to recognize that there is a problem to be solved. Since real life doesn't always stop and announce that there is a problem to be solved, we believe an intelligent simulation of real life should not either. Action Format Software is highly effective for simulating complex processes involving decision-making. One example is an application of Action Format Software to the engineering design process in which the student must continually find and correct problems in a construction process.

* Trademark of ITS, inc.

In all cases, the viewer can interact with what he sees on the screen, interrupting the video to ask a question or to detect some problem, as well as change the course of events in some way. The user's activities are entirely self-paced and require no experience with computer or video systems. In fact, the keyboard is gone and the student merely touches the screen with a light pen to interact with the system. This factor is particularly critical in training learners without strong literacy skills.

ITS creates turn-key systems, specially designed for particular training problems. ITS systems track the learning of each student and can report to the student and the instructor detailed analyses of the student's progress and problems in mastering material.

The founders of ITS, Drs. Harry Lasker and David Lubin have a broad background in education and between them have nearly 15 years of service on the faculty of the Graduate School of Education at Harvard University. Their understanding of the learning process has been translated into effective software which works with the student's natural tendencies, rather than asking the student to conform to a computer controlled curriculum.

DESIGN AND DEVELOPMENT HANDBOOK
SSP PROJECT UPDATE

Dr. Charles Reiguleuth reported on the purpose and status of a Scientific
Services Program(SSP) project that he and Dr. Phil Doughtey have been
working on for TDI. The project is designed to provide user friendly guide-
lines on the instructional design and developement of curriculumn. It is
being funded under the Functional Basic Skills Education Program(FBSEP)
effort but will be of equal value to any Army Training Developer. In addi-
tion to a project status update he briefly reviewed the process of design
and development. Generally this included the function of design in which a
training developer must match the performance required as a result of ana-
lysis to the type of learning activities necessary to most effectively
train a soldier learner. Using the classification schema developed by
Merrill and the matrix he has developed(see attached), Dr. Reiguleuth
walked the group through a couple of examples of how the process is to
work. The project, in addition to developing the handbook procedures, will
include field testing with various TRADOC schools to insure the materials
work and have utility.

Incl 23

SOURCE

	EXPERT (TEACHER)	AMATEUR (STUDENT)	MATERIALS/ GAMES	NATURAL ENVIRONMENT
INDIVIDUAL	PROFESSIONAL TUTORING	PEER TUTORING	INDIVIDUALIZED MATERIALS	INDIVIDUAL PROJECTS
GROUP	LECTURE/ DEMO	DISCUSSION GROUP	GROUP ACTIVITIES	GROUP PROJECTS

RECIEVER

TRADOC PAM 350-7

A SYSTEMS APPROACH TO

TRAINING

WHAT IS SAT?

THE APPLICATION OF EXPLICITLY ORDERED AND STRUCTURED PROCEDURES TO DETERMINE

    O WHAT TO TRAIN

    O WHERE TO TRAIN

    O WHEN TO TRAIN

    O HOW TO TRAIN

OR

THE APPLICATION OF PROVEN, ACCEPTED MILITARY PRACTICES (STAFF STUDIES,
ANALYSES, ESTIMATES, TROOP LEADING) TO DETERMINE THE TRAINING:

O WHAT, WHERE, WHEN, AND HOW
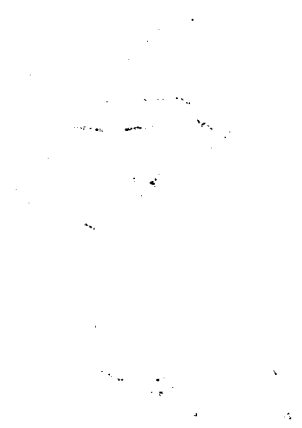
TRADOC REGULATION 350-7

A SYSTEMS APPROACH TO TRAINING

- THE CAPSTONE DOCUMENT THAT PROVIDES TRADOC POLICY GOVERNING A SYSTEMS APPROACH TO TRAINING (TBP APR 82)

- [...] MINIMUM REQUIREMENTS OF "WHAT MUST BE DONE TO INSURE THE SYSTEMATIC [...] IMPLEMENTATION, [...] AND [...] AND TRAINING SUPPORT MATERIALS

- THE IMPLEMENTATION DOCUMENT FOR INSTRUCTIONAL SYSTEMS DEVELOPMENT

- PUBLICATION OF TRADOC 350-7 COMPLETES PHASE 1 OF A 3 PHASE PROGRAM. PHASES II AND III ARE:

  - PRODUCE PAMPHLETS ON THE "HOW TO"

  - DESIGN AND DEVELOP TRAINING PROGRAMS TO SUPPORT "HOW TO" PAMPHLETS
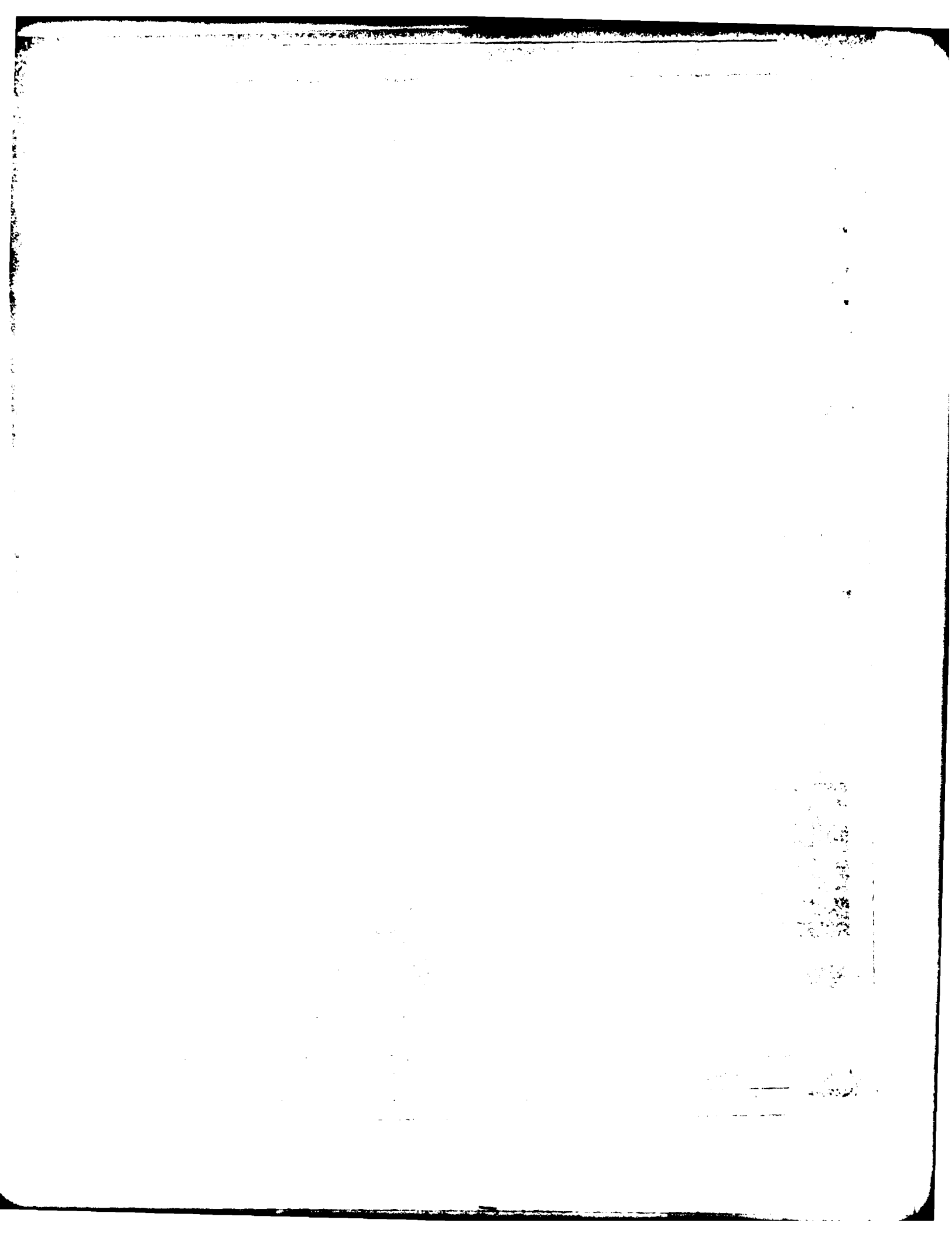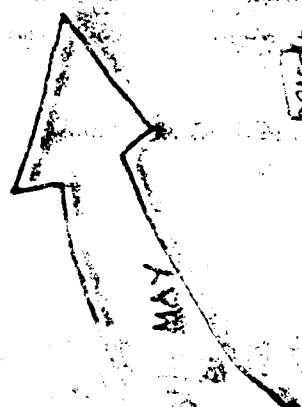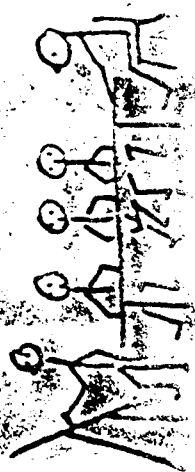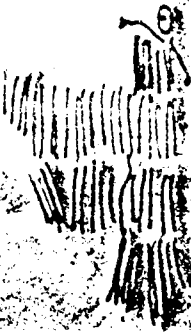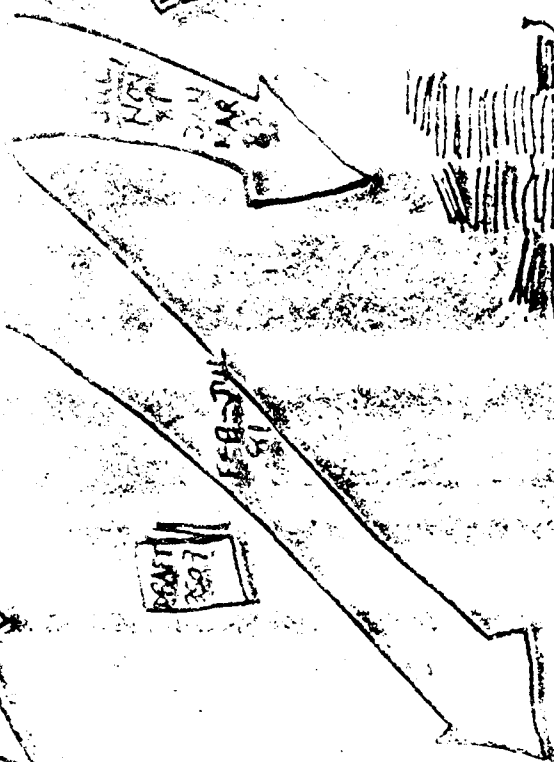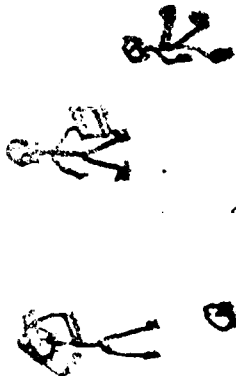
- TDI-SFTD ACTION AGENCY
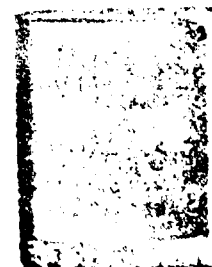
elongated shape
due to prolonged
delivery
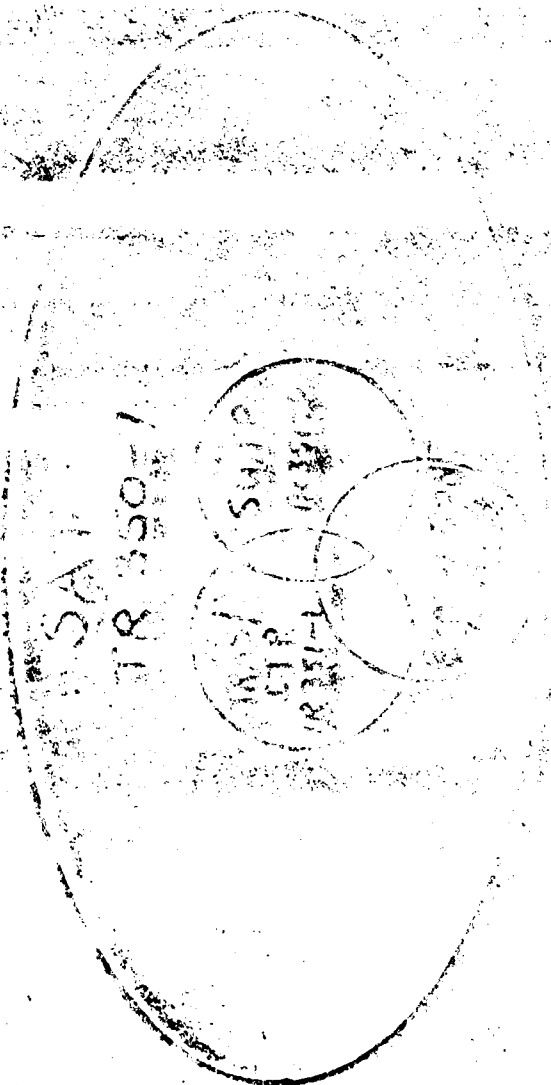
USA
TR 350-1
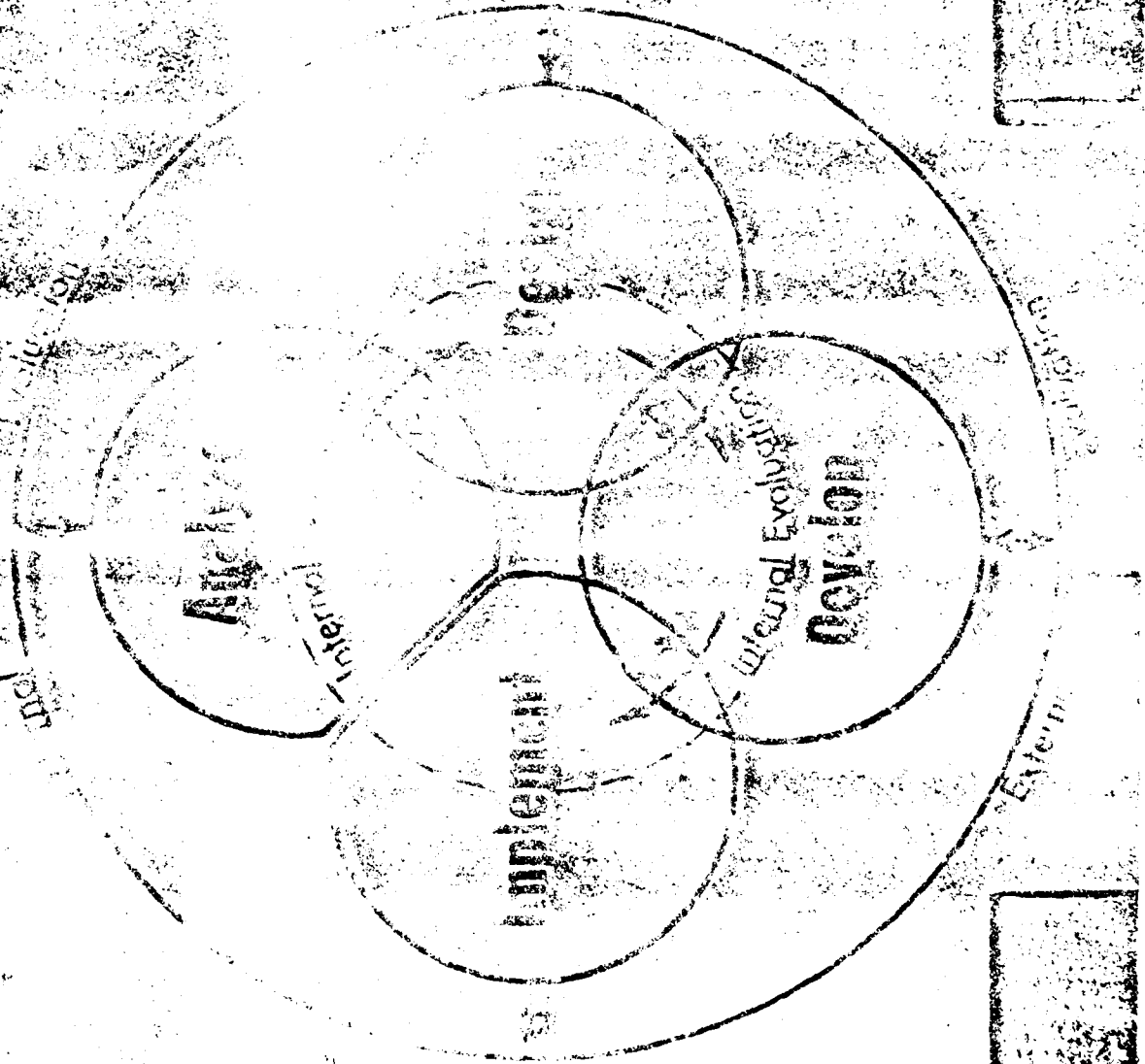
A SYSTEMS APPROACH DOES NOT GUARANTEE --

    O SOLUTIONS TO ALL PROBLEMS

    O "BEST AND FINAL" SOLUTIONS TO TRAINING PROBLEMS

IT CAN PROVIDE --

    o USEFUL FEEDBACK

    o SOUND BASIS FOR ITERATIVE IMPROVEMENT

    o IDENTIFICATION OF "NON-TRAINING" PROBLEMS

    o INCREASED PROBABILITY OF SUCCESS

    o EARLIER IDENTIFICATION OF PROBLEMS AND "QUICK FIXES"

EVALUATION DRIVES THE SYSTEM

TRADOC REG 350-7

A SYSTEMS APPROACH-TO-TRAINING

THE EXTENT TO WHICH WE COMMIT THE ARMY TO A SYSTEMS APPROACH TO TRAINING WILL GOVERN HOW WELL WE ACCOMPLISH THE BROADER AND LONG RANGE ISSUES OF ARMY TRAINING 1990, CAST, AND MOBILIZATION.

IF "UNIT NEEDS" ARE TO GOVERN THE ACTIVITIES OF THE TRAINING ESTABLISHMENT THEN EVALUATION MUST DRIVE THE SYSTEM.
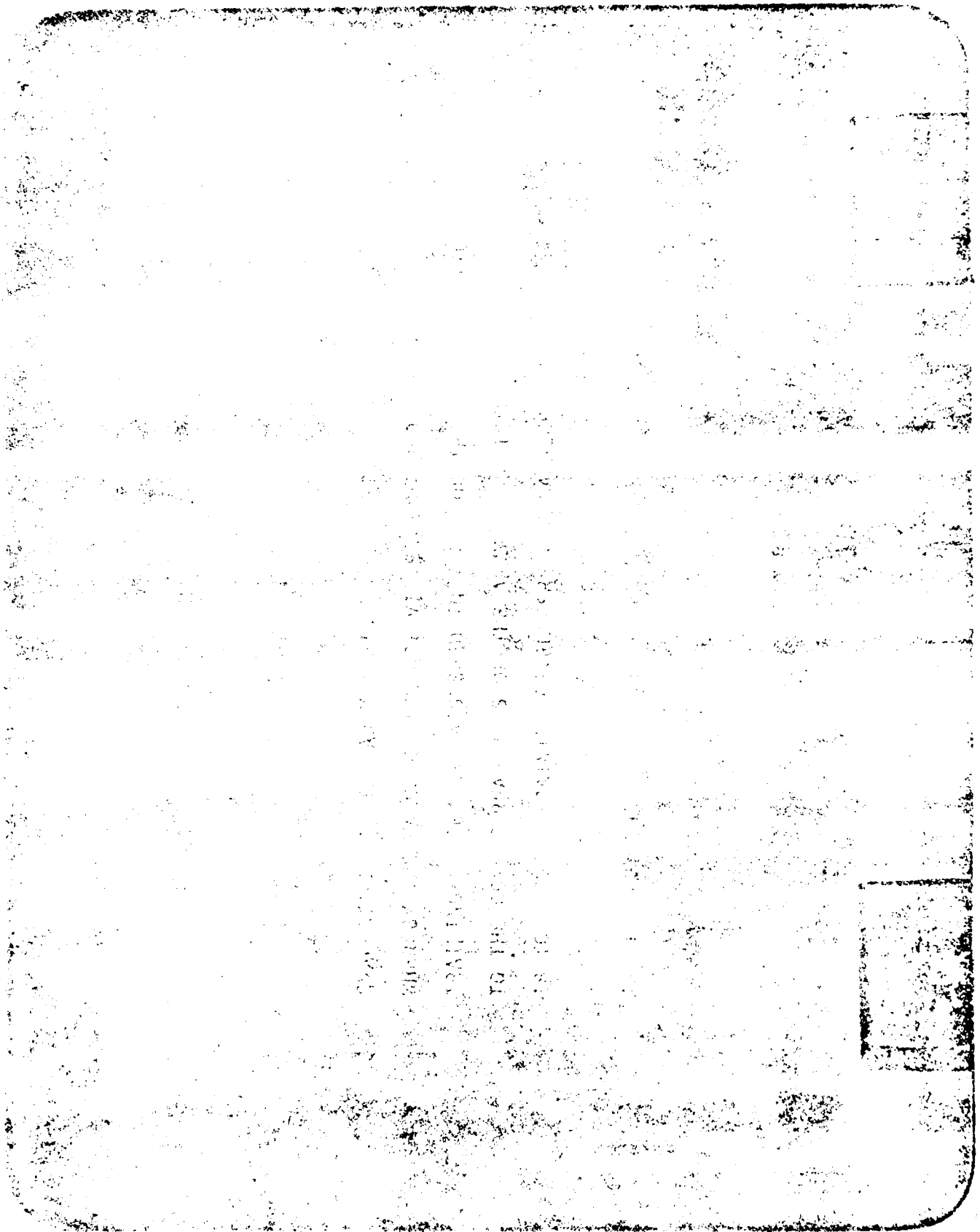
EVALUATION

o DESCRIPTIVE NOT PRESCRIPTIVE

o ASSESSES CURRENT STATE OF THE SYSTEM

o CONCERNED WITH EFFECTIVENESS AND EFFICIENCY OF THE SYSTEM

o WITHOUT EVALUATION THE SYSTEM CANNOT BE ADAPTIVE

o PROCESS BOTH REACTIVE AND PROACTIVE

EVALUATION

o FOCUSES ON TRAINING PRODUCTS

    o TRAINING PROGRAMS

    o TRAINING SUPPORT MATERIALS

o EVALUATION FOR DECISION MAKING; I.E., PROACTIVE (FORMATIVE)

o EVALUATION FOR ACCOUNTABILITY; I.E., RETROACTIVE (SUMMATIVE)

HQ TRADOC

FOCUSES ON SERVICE
SCHOOLS' AND ATCS'
EFFORTS TO SUPPORT
FIELD UNITS' TRAINING
REQUIREMENTS

TRAINING PROPONENT

FOCUSES ON VERIFICATION AND VALIDATION OF
TRAINING PROGRAMS AND ETM, AND PROVISIONS
OF TOOLS FOR UNIT EVALUATION

USER UNIT

FOCUSES ON ASSESSING
PROFICIENCY

EVALUATION IS POINTLESS UNLESS ACTION IS TAKEN TO CORRECT DEFICIENCIES
AND DISCREPANCIES REVEALED BY THAT PROCESS

BROADEN THE FOCUS OF EVALUATION INQUIRY: RELATE IT TO REALITY

SINGLE TRADOC DOCUMENT GOVERNING POLICY FOR A SYSTEMS APPROACH TO TRAINING

- GENERIC MODEL - STANDARD APPROACH
- (USE BEST PROCESS/PROCEDURES (WHAT vs HOW TO)
- ... EVAL DR...
- STRESSES ... ASSESSMENT -- (DON'T FIX IT IF IT AIN'T ...)
- RECOGNIZE NEED FOR QUICK FIXES - (ENTRY AT ANY POINT)
- EMPHASIS ON AUDIT TRAIL ALLOW ITERATIVE INVOLVEMENT
- FOCUSES ON PRODUCT/OUTPUT EVALUATION AS OPPOSED TO PROCESS EVAL
- FOCUSES ON UTILITY & COMMON SENSE
- STANDARD APPROACH FOR CONTRACTORS - (GOVERNMENT FURN* SHED MATERIALS)
- ALLOWS SYSTEM TO FOCUS ON DEVELOPMENT OF "HOW TO", & ... TO SUPPORT SAT

TYPICAL PROBLEMS

OVERCOMING "WHAT" ADHERENCE TO
"THE LETTER OF THE LAW" RATHER THAN
"THE SPIRIT"

COMBINED REACTION...
SYSTEM AS A WHOLE

SEPARATING, EVALU...

ARMY COMMUNICATIVE TECHNOLOGY OFFICE

DARCOM/TRADOC
CECOM/ATSC

FT. EUSTIS, VA

INCL 25

267
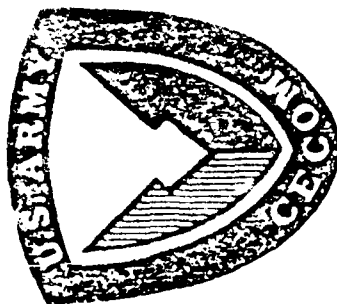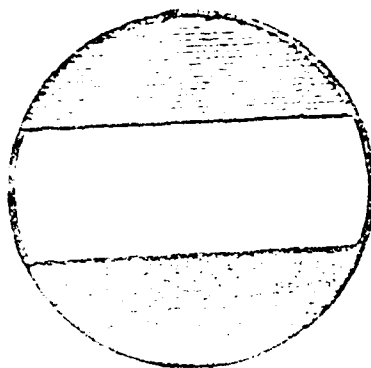
MANAGING THE UNMANAGEABLE
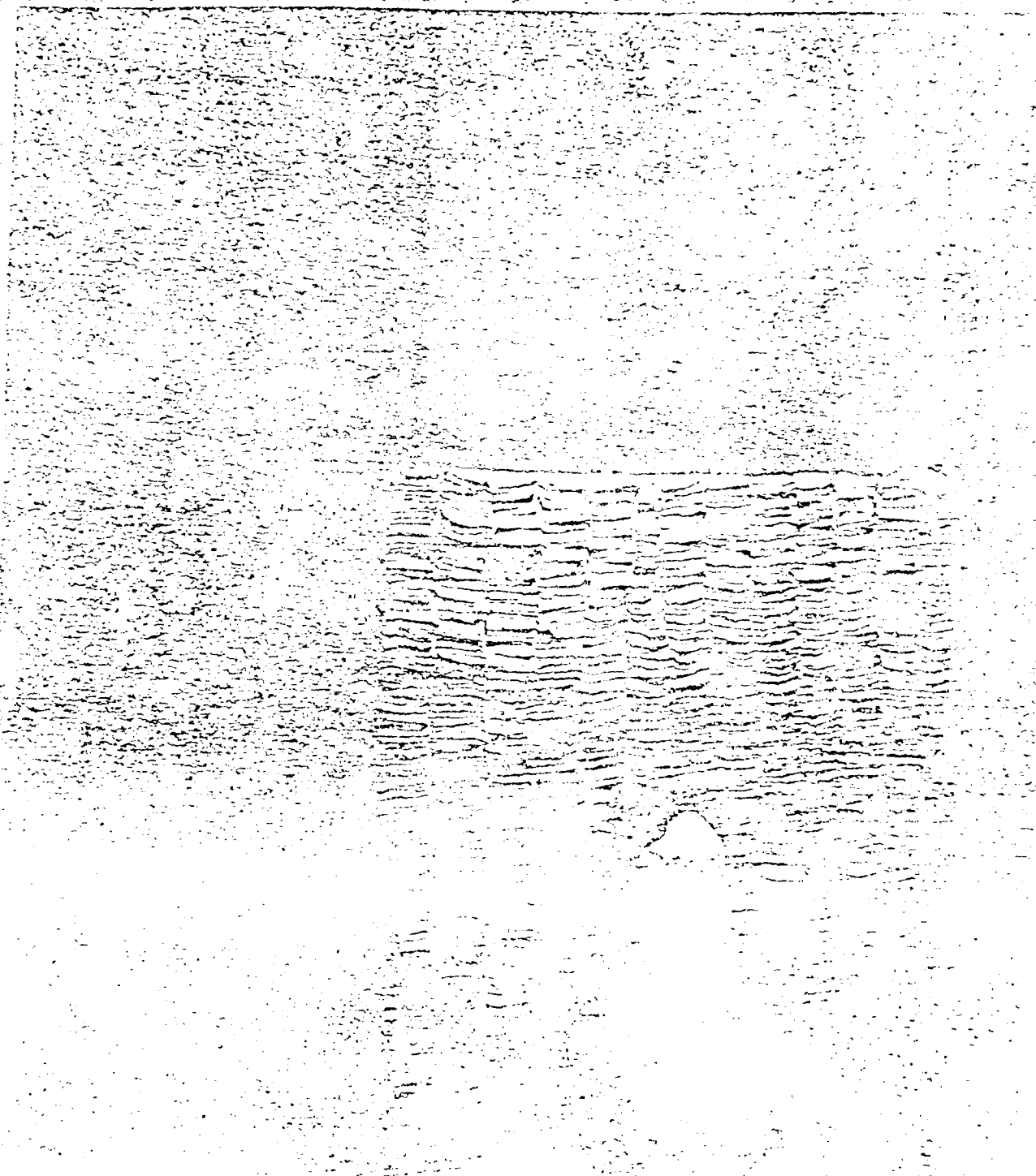
THE PAPER PROBLEM

"WE NEED YOUR HELP IN TACKLING A PROBLEM OF LONG RANGE SIGNIFICANCE TO DARCOM, TRADOC, AND, INDEED, THE WHOLE ARMY... THE PROBLEM IS PAPER: IF WE DO NOT MOVE TO CHANGE OUR WAY OF DOING BUSINESS, THE ARMY OF THE 1980's WILL DROWN IN IT."

264
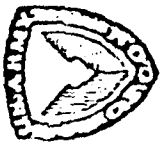
ARMY COMMUNICATIVE TECHNOLOGY OFFICE

MISSION

- LIFE CYCLE MANAGEMENT FOR THE DEVELOPMENT OF ELECTRONIC SYSTEMS FOR PRODUCTION, DISTRIBUTION AND DELIVERY OF DOCTRINAL, INSTRUC-TIONAL AND TECHNICAL MATERIALS.

- EXPLORATION OF MILITARY APPLICATIONS OF ELECTRONIC TECHNOLOGY FOR CONVEYING INFORMATION IN COMMUNICATIVE SYSTEMS.

- SERVE AS THE PRINCIPAL FOCAL POINT BELOW HQS, DA FOR ORGANIZATION AND SUPPORT OF THESE ACTIVITIES.

PAPER VS ELECTRONS

ELECTRONIC
(SMALL COMPUTERS, SILICON,

PUBLISHING
FREIGHT, POSTAL DIST, CLOTH

DELIVERY
OPTICAL, TELECOMMUNICATIONS

TRADITIONAL FILM, GAS,
SILVER,
(LABOR)
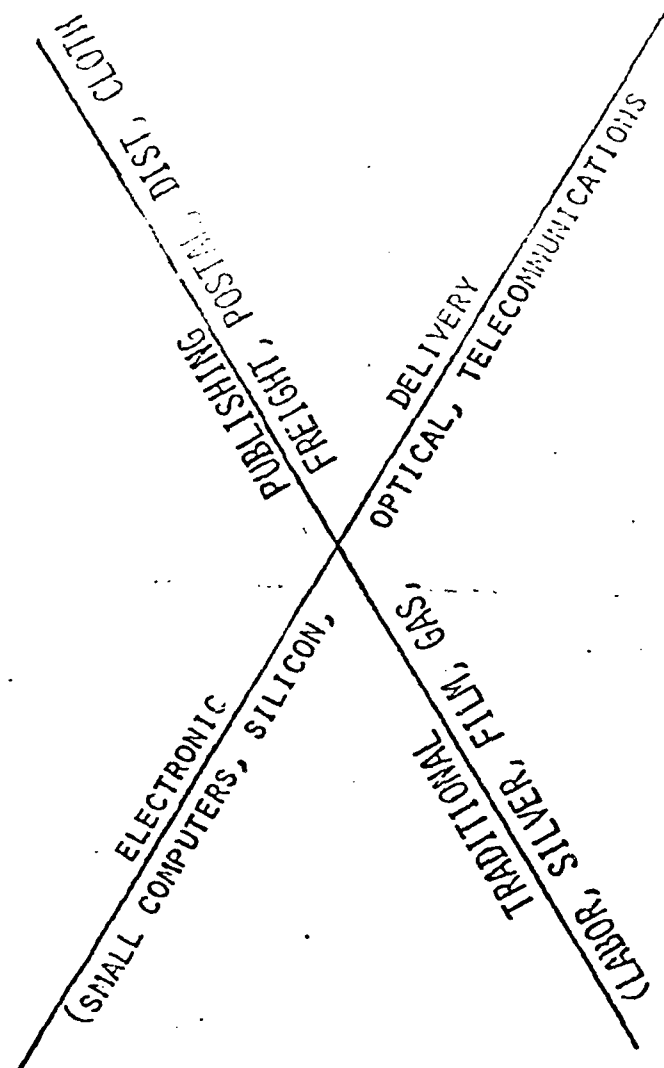
COST

TIME
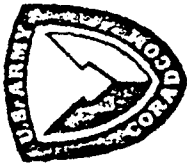
COMMUNICATIVE TECHNOLOGY MEANS INFORMATION TRANSFER

COMMUNICATIVE TECHNOLOGY

PRODUCTION
DISTRIBUTION
DELIVERY

> END USER

SYSTEMS & TECHNOLOGY

SUBJECT MATTER EXPERTS

- KNOWLEDGE
- IDEAS
- INFORMATION
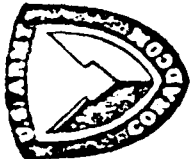
ARMY COMMUNICATIVE TECHNOLOGY

ARMY ISSUES

- QUANTITY AND COMPLEXITY OF SYSTEM DOCUMENTATION INCREASING

- QUANTITY OF PAPER-BASED TRAINING MATERIALS INCREASING

- SOLDIER READING LEVEL DECREASING

- PRODUCTION COST OF DOCUMENTATION HIGH

VIDEODISC TECHNOLOGY

CURRENT CAPABILITIES

- COMPUTER INTERFACE

- STUDENT INTERACTION

- RANDOM ACCESS/BRANCHING

- 54,000 FRAMES (PICTURES)

- FREEZE FRAME

- MOTION

- COLOR

- MAN PORTABLE

- CHARACTER GENERATOR

- LIGHT PEN/TOUCH PANEL

VIDEODISC SYSTEM TECHNOLOGY

ARMY REQUIREMENTS

FOR

FUTURE DEVELOPMENT

- FREEZE FRAME WITH SOUND OVER

- INEXPENSIVE REPLICATION

- DIGITAL STORAGE 10^{10}

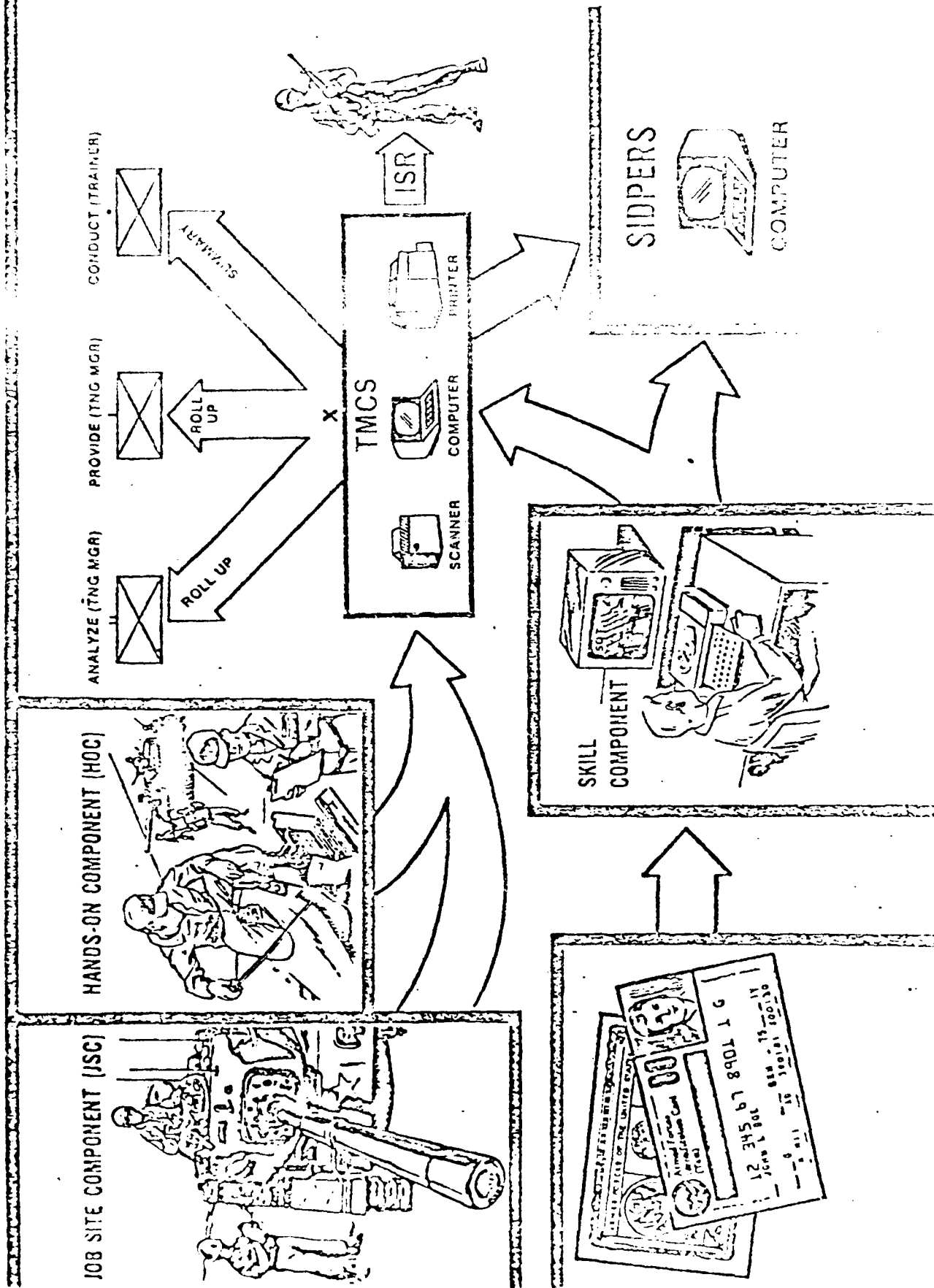- FLAT SCREEN DISPLAY

- LARGER SOUND BANDWIDTH (10 KHz)

275

ACTO

STRATEGY

FIELDING

TRADOC SCHOOLS 1980
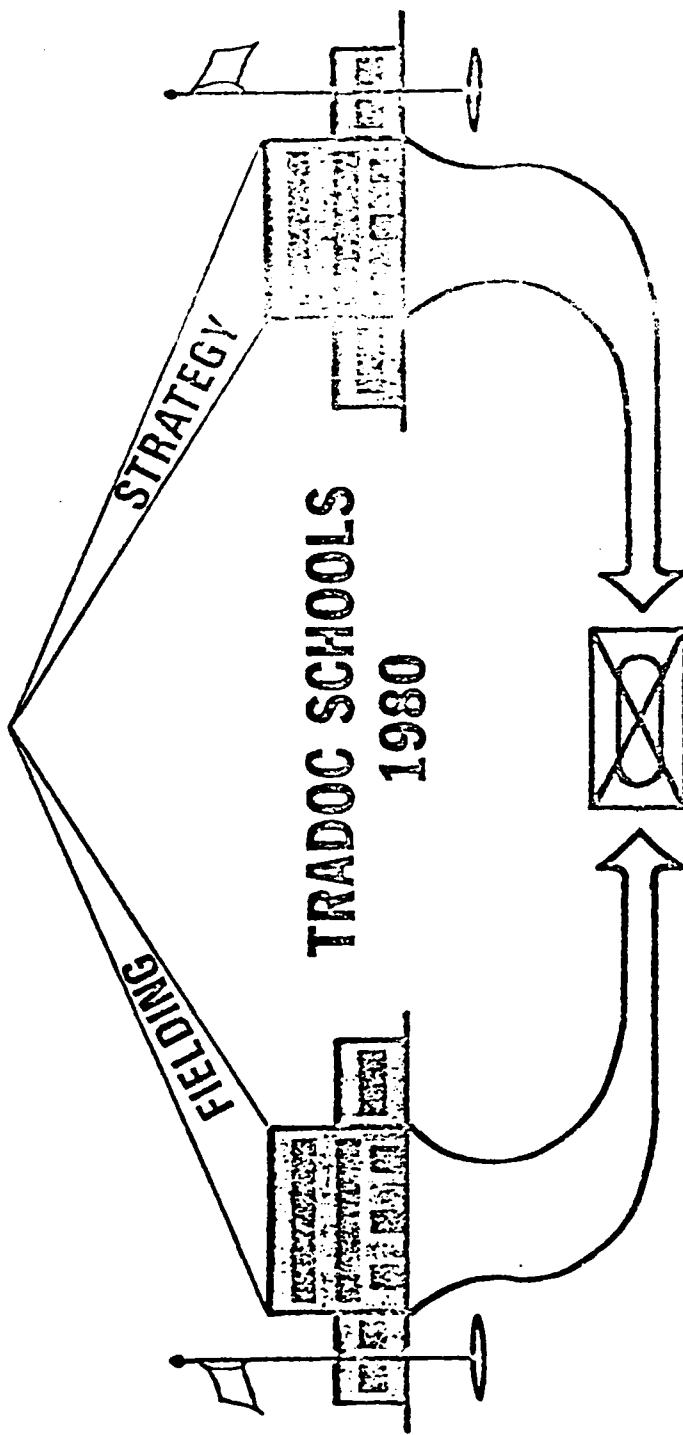
EXPORTED TRAINING 1984-85

ARMY COMMUNICATIVE TECHNOLOGY OFFICE

VIDEO DISC PROGRAMS

- USAIS VISTA - INTERACTIVE LEADERSHIP PROGRAM

- USASIGS - 26Y GROUND SATELLITE EQUIPMENT REPAIRER COURSE

- USAARMS - TARGET ACQUISITION

- USAADS - I HAWK MAINTENANCE

- USAFAS - 31V TECHNICAL COMMUNICATION SYSTEMS OPERATOR MECHANIC
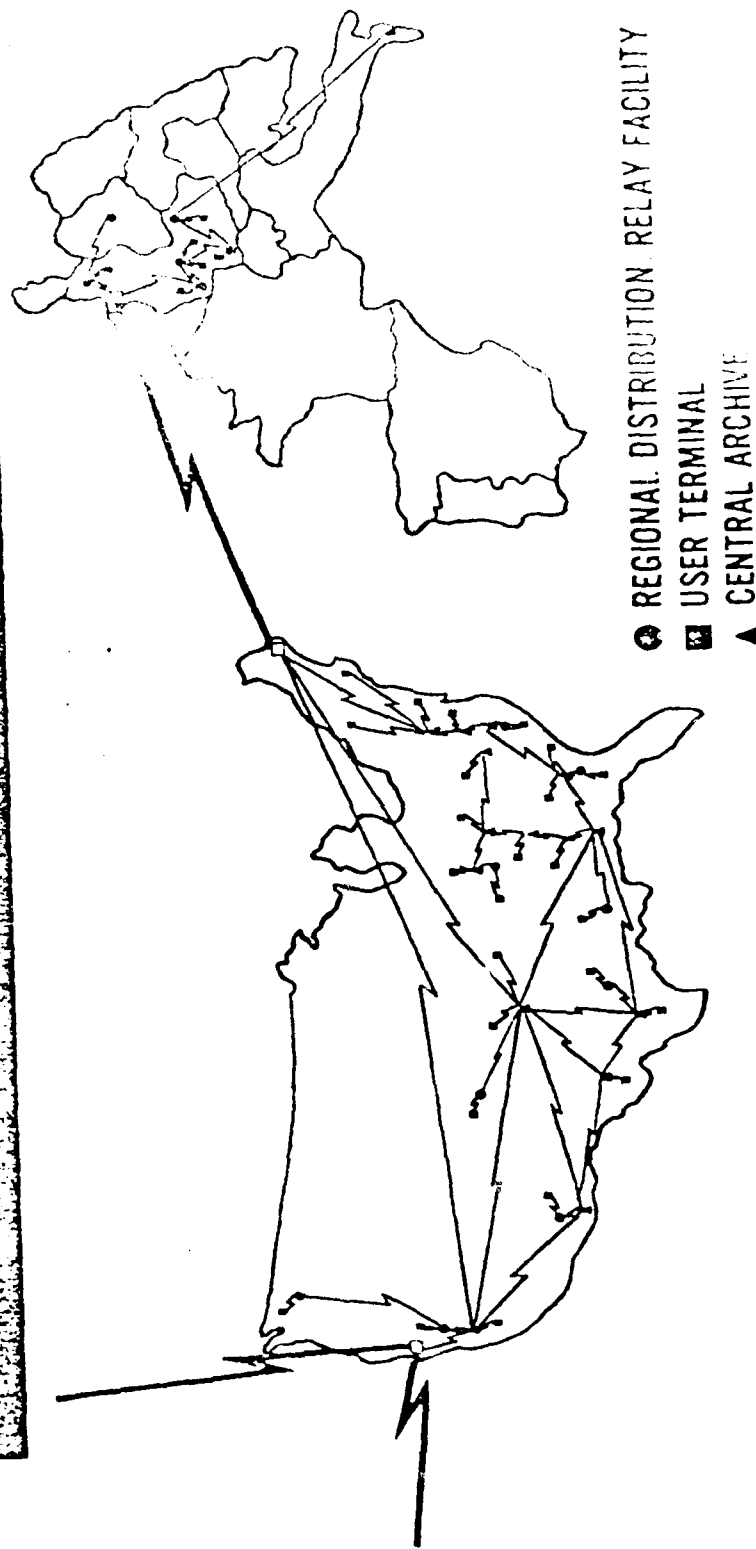
- HTTB - MAP DISPLAY WITHIN CELLULAR COMMAND POST
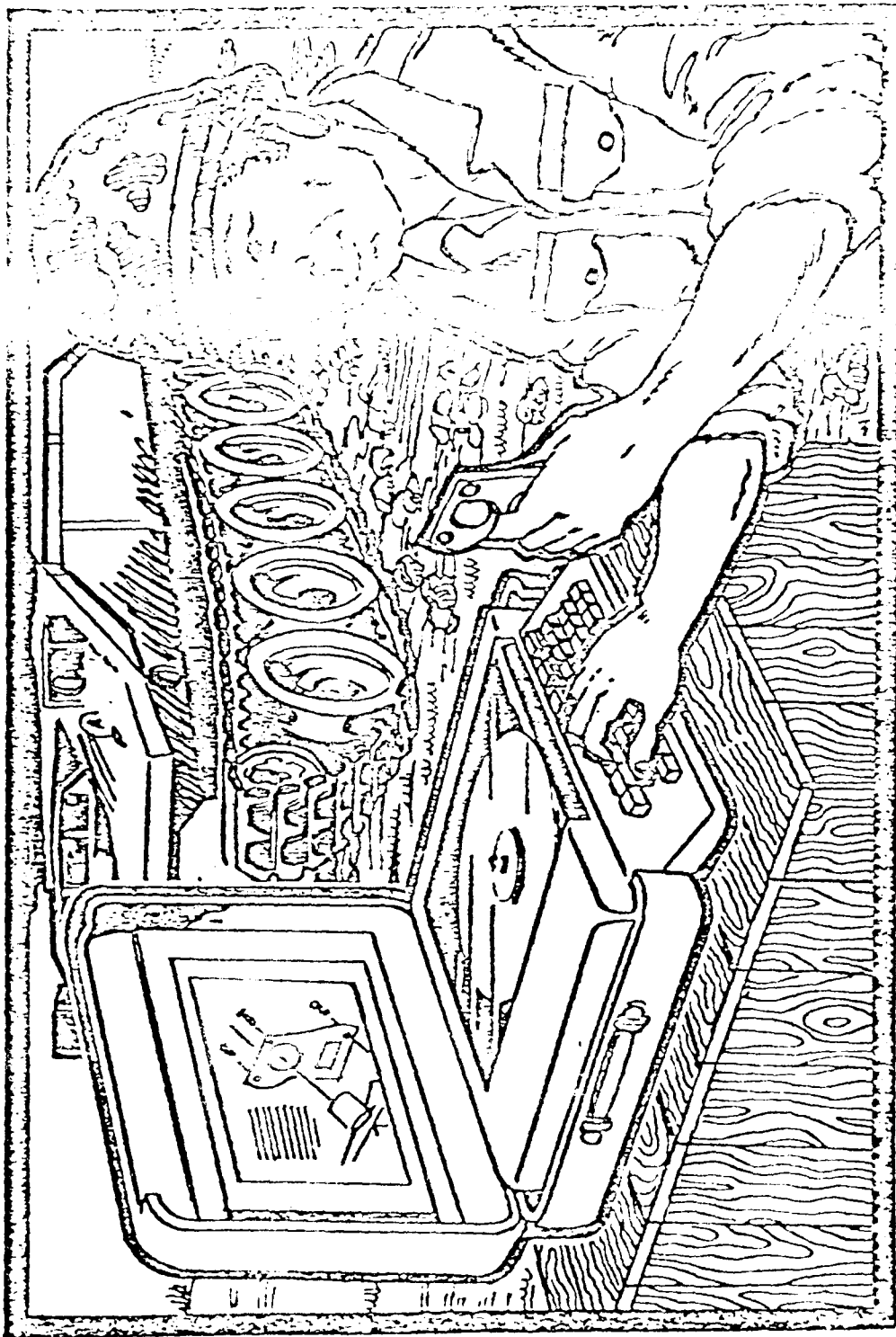
EIDS AND SQT

ANALYZE (TNG MGR) PROVIDE (TNG MGR) CONDUCT (TRAINER)

ROLL UP ROLL UP SUMMARY

X

TMCS

SCANNER COMPUTER PRINTER

ISR

SIDPERS

COMPUTER

JOB SITE COMPONENT (JSC)

HANDS-ON COMPONENT (HOC)

SKILL COMPONENT

COMMUNICATIVE ELECTRONIC DELIVERY AND RETRIEVAL SYSTEM (CEDARS) CONCEPT

⊕ REGIONAL DISTRIBUTION RELAY FACILITY
▣ USER TERMINAL
▲ CENTRAL ARCHIVE

USAREC

JOINT OPTICAL INFORMATION NETWORK

1. USAREC IDENTIFIES TWO-FOLD PROBLEM:

   A. COMMUNICATING INFORMATION TO THE PROPOSED ENLISTEE

   B. POOR EXTERNAL AND INTERNAL COMMUNICATIONS

2. JOINT OPTICAL INFORMATION NETWORK (JOIN) PROPOSED AND WILL PROVIDE:

   A. A MOTIVATIONAL AUDIO/VISUAL PRESENTATION OF ARMY LIFE AND ASSIGNMENTS

   B. A VEHICLE TO TRAIN RECRUITERS AND GUIDANCE COUNSELORS

   C. IMPROVED COMMUNICATIONS BETWEEN DISTRICT AND AREA RECRUITING STATIONS

   D. PROVIDE PRELIMINARY INTEREST, APTITUDE, MEDICAL INVENTORY EVALUATION

      AT RECRUITING STATION

US ARMY RECRUITING COMMAND

JOINT OPTICAL INFORMATION NETWORK (JOIN)

* INTEGRATED ADP, MICROPROCESSOR, VIDEO DISC SYSTEM FOR RECRUITER FINGERTIP ACCESS/
CONTROL

ADP

REQUEST

ARADS

ARS

MICROPROCESSOR

VIDEO DISC

PRINTER
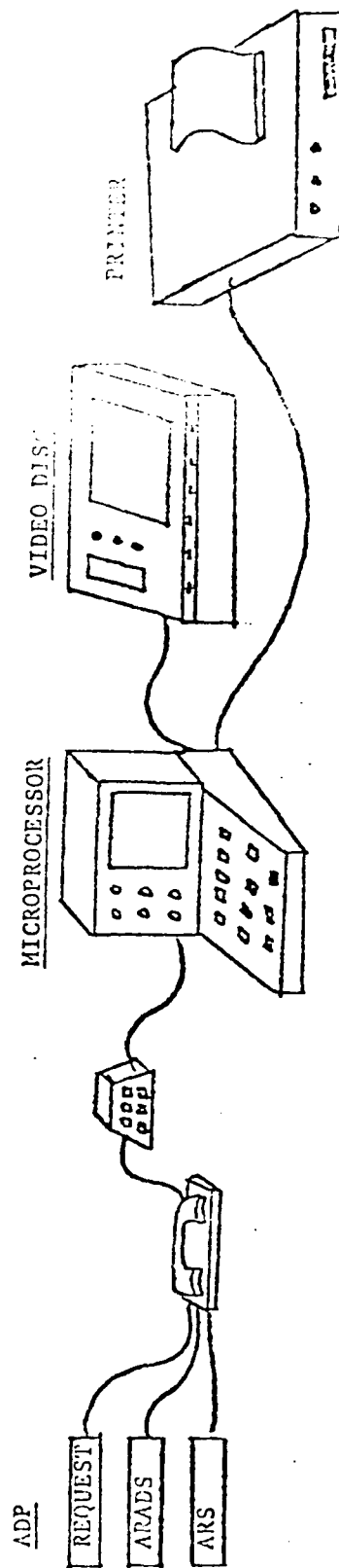
ARMY COMMUNICATIVE TECHNOLOGY OFFICE

VOICE TECHNOLOGY PROGRAM

POTENTIAL APPLICATIONS

- COMBAT VEHICLE WARNINGS
- AIRCRAFT PREFLIGHT CHECK LIST
- PHYSICAL SECURITY
- JOB AIDS/TROUBLESHOOTING
- AUTOMATED AIR TRAFFIC CONTROL
- COMMUNICATIONS SPOOFING
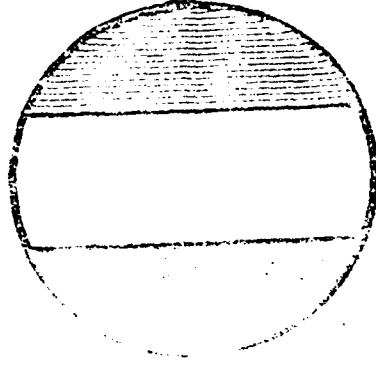- COMPUTER OUTPUTS
- TRAINING
- OTHERS

ARMY COMMUNICATIVE TECHNOLOGY OFFICE
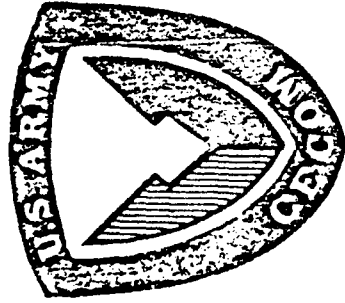
DARCOM/TRADOC

CECOM/ATSC

FT. EUSTIS, VA

APPLICATIONS OF MODERN TECHNOLOGY

TO

TRAINING

PRESENTED BY

MR. FRANK E. GIUNTI

INSTRUCTIONAL DEVELOPMENT DIVISION

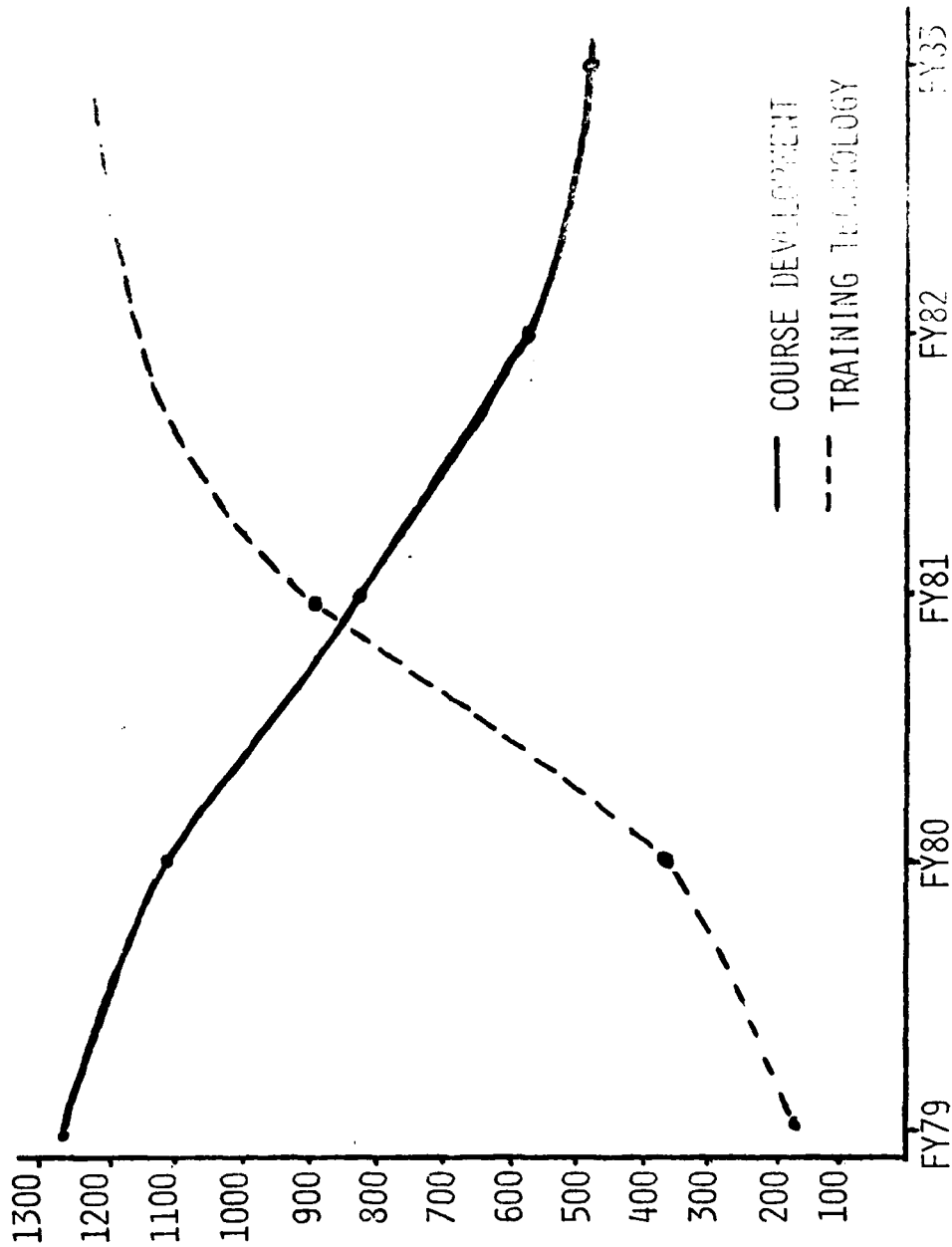TRAINING DEVELOPMENTS INSTITUTE

FORT MONROE, VIRGINIA

23651

INSTRUCTIONAL DEVELOPMENT DIVISION

- SUPPORT, DEVELOP AND EVALUATE PROGRAMS/PROJECTS RELATED TO THE APPLICATION OF CURRENT AND EMERGING TECHNOLOGY TO SPECIFIC TRADOC TRAINING NEEDS.

- SUPPORT ARMY COMMUNICATIVE TECHNOLOGY OFFICE (ACTO) PROGRAMS

- SUPPORT/DEVELOP PILOT COMPUTER BASED INSTRUCTION PROGRAMS

- ASSIST IN DEVELOPMENT OF AND PROVIDE CONTRACTUAL SUPPORT FOR SYSTEM DEVELOPED COURSES

- ASSIST IN THE DEVELOPMENT AND PROVIDE CONTRACTOR SUPPORT FOR CITA

- PROVIDE CONTRACTUAL COURSE DEVELOPMENT AND TRAINING ASSISTANCE TO TRADOC SCHOOLS, ATC AND RESERVE COMPONENTS
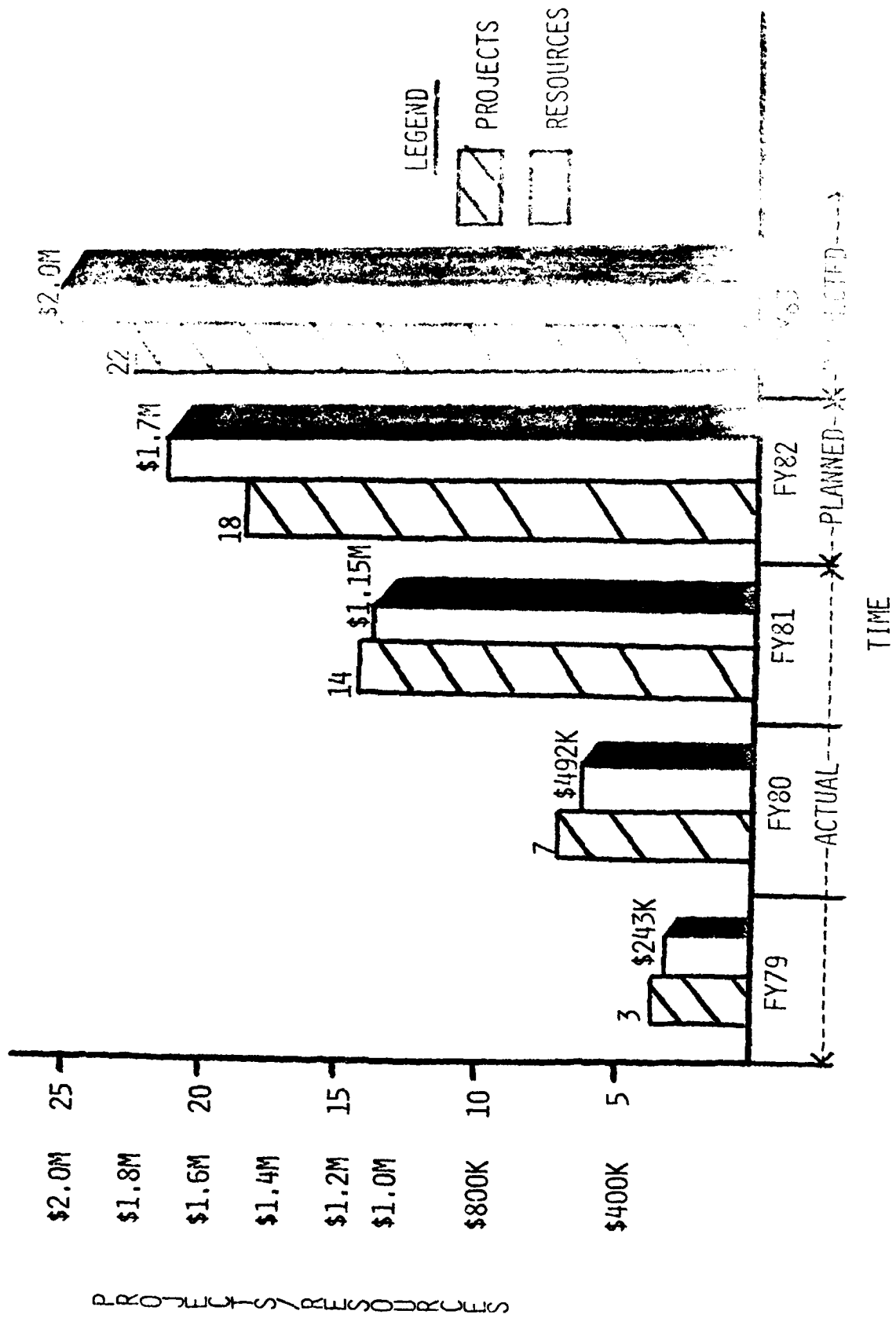
PROJECT TRENDS

FISCAL YEAR

DOLLARS

1300
1200
1100
1000
900
800
700
600
500
400
300
200
100

FY79   FY80   FY81   FY82   FY35

——— COURSE DEVELOPMENT
- - - TRAINING TECHNOLOGY

TRENDS

MODERN TECHNOLOGY APPLICATIONS TO TRAINING

LEGEND

PROJECTS
RESOURCES

PROJECTS/RESOURCES

$2.0M — 25
$1.8M — 20
$1.6M
$1.4M — 15
$1.2M
$1.0M — 10
$800K
$400K — 5

$2.0M

22

$1.7M

18

$1.15M

14

$492K

7

$243K

3

3

FY79   FY80   FY81   FY82

|<---ACTUAL--->|<---PLANNED--->|

TIME

CURRENT TDI TRAINING TECHNOLOGY EFFORTS

TDI TRAINING TECHNOLOGY EFFORTS

● FT JACKSON, SC   – ARMY TYPING TRAINING PROJECT (ATTP), MOS 71L10

● FT SILL, OK   – VIDEODISC TRAINING DELIVERY SYSTEM (VTDS), MOS 31V10

● FT GORDON, GA   – COUNTERFIRE DEPARTMENT (CFD) VIDEODISC APPLICATIONS
                       STUDY

                    – EQUIPMENT INDEPENDENT TRAINING SYSTEM (EITS), MOS 26Y10
                       (COMPLETED)

                    – EQUIPMENT INDEPENDENT TROUBLESHOOTING TRAINING PROJECT
                       (EITTP), MOS 26Y10

                    – TELETYPE KEYBOARD TRAINING TEST (TKT), MOS 72E10

● FT BLISS, TX   – DISTRIBUTED INSTRUCTIONAL SYSTEM (DIS), MOS 24E10

                    – COMMAND & CONTROL (C^2) CAI & 2D SIMULATION PROJECT,
                       MOS 16H, 25L, 14G

● FT BENNING, GA   – VIDEODISC INTERPERSONAL SKILL TRAINING AND ASSESSMENT
                       (VISTA), INFANTRY OFFICER BASIC COURSE

TDI TRAINING TECHNOLOGY EFFORTS (CONTINUED)

- ABERDEEN PROVING GROUND, MD — HAND HELD COMPUTER (HHC) PROJECT

- FT BELVOIR, VA — MINEFIELD BREACHING BATTLEDRILL EVALUATION (MBBE), 12B40

- REDSTONE ARSENAL, AL — CAI COURSEWARE DEVELOPMENT, 10M FIELD TEST SET, MOS 27E, AND I-HAWK CONTINUOUS WAVE RADAR SIGNAL PROCESSOR, MOS 24

- FT KNOX, KY — ARMOR VIDEODISC TARGET ACQUISITION PROJECT (VITA), CMF 19

- FT LEE, VA — JET FUEL THERMAL OXIDATION TEST (JFTOT) PROJECT

- FT KNOX, KY
  FT BENNING, GA — TRAINING DEVELOPMENTS ORGANIZATIONAL MODEL (TDOM)
  REDSTONE ARSENAL, AL

- FT MONROE, VA — SHARED APPLIED TRAINING TECHNOLOGY INFORMATION SYSTEM (SATTIS)

AUTOMATED TYPING TRAINING PROGRAM (ATTP)

● PURPOSE:

EVALUATE THE RELATIVE FEASIBILITY, EFFECTIVENESS, AND COST OF THREE METHODS OF TEACHING KEYBOARD TYPING SKILLS FOR 71L10 ADMINISTRATIVE SPECIALISTS AT THE ATC, FORT JACKSON

● PARTICIPANTS:

- ADMINISTRATION SCHOOL   -   SOLDIER SUPPORT CENTER   -   TDI

● COMPLETED ACTIONS:

- TDI CONTRACT AWARDED - TRAINING ASSOCIATES UNIVERSAL TRAINER (TAUT-2000) - FUNDED (4TH QTR, FY 80)

- TDI CONTRACT AWARDED - KEE, INC, - FUNDED (2ND QTR, FY 81)

- PHASE I CURRENT TRAINING METHOD VS TAUT-2000 (4TH QTR, FY 82)

- INTERIM REPORT ON CURRENT TRAINING VS TAUT-2000 (4TH QTR, FY 82)

- TEST OF CURRENT TRAINING METHOD VS MCT-100 METHOD COMPLETED (1ST QTR, FY 82)

● PLANNED ACTIONS:

- FINAL REPORT ON CURRENT TRAINING METHOD VS TAUT-2000 VS MCT-100 (2ND QTR, FY 82)

PHOTOGRAPH OF STANDARD TYPING CLASSROOM.
INSTRUCTOR IS SITTING IN FRONT OF CLASS
WITH LARGE LIGHTED KEYBOARD BEHIND HIM.
AS INSTRUCTOR TYPES A LETTER THE BOARD
LIGHTS UP THE LETTER AND THE STUDENTS ARE
SUPPOSED TO TYPE THE SAME LETTER. STUDENTS
USE MANUAL TYPEWRITERS.

PHOTOGRAPH OF CLASSROOM FULL OF STUDENTS
USING THE TAUT SYSTEM. HARDWARE INCLUDES
KEYBOARD, CONSOLE WHICH RECORDS CORRECT
AND INCORRECT STROKES, MODIFIED BESELER
CUE-SEE AUDIOVISUAL PROJECTOR.

PHOTOGRAPH OF INSTRUCTOR GIVING INDIVIDUAL
ATTENTION TO STUDENT USING TAUT SYSTEM.

PHOTOGRAPH OF STUDENT USING KEE SYSTEM
HARDWARE INCLUDES MCT-100 (MAIN FRAME -
COLOR CODED DISPLAY, LIGHT EMITTING
DIODES, FLOPPY DISC, KEYBOARD AND CRT
SCREEN).

PHOTO OF KEE SYSTEM WITH PRINTER.

TELETYPE KEYBOARD TRAINING PROGRAM (TKTP)

● PURPOSE:

- TEST AND EVALUATE TELETYPE/TYPING KEYBOARD TRAINING AT THE SIGNAL SCHOOL AND THE 35TH BRIGADE, FT BRAGG USING THE TRAINING ASSOCIATES UNIVERSAL TRAINER (TAUT-2000) METHOD VS CURRENT METHOD OF TRAINING AND FOR REFRESHER/PROFICIENCY TRAINING IN UNITS.

● PARTICIPANTS:

- SIGNAL SCHOOL   -   35TH SIGNAL BRIGADE   -   TDI

● COMPLETED ACTIONS:

- TDI AWARDED TO TRAINING ASSOCIATED UNIVERSAL TRAINER (TAUT-2000) PER ATTP CONTRACT (3RD QTR, FY 81)

- COMPILATION OF SIGNAL SCHOOL & FT BRAGG DATA COMPLETED (1ST QTR, FY 82)

● PLANNED ACTIONS:

- FINAL REPORT DUE (1ST QTR, FY 82)

COMPUTER BASED INSTRUCTION (CBI) PROJECT

- PURPOSE:
  - EVALUATE THE EFFECTIVENESS OF USING HIGHLY INTERACTIVE ___ ___ CBI TO TRAIN
    MAINTENANCE PERSONNEL IN THE AREAS OF THE TOW AND I-H ___ ISSILE SYSTEMS, USA ___ ___

- PARTICIPANTS:
  - USAMMCS, REDSTONE ARSENAL, AL
  - TDI

- COMPLETED ACTIONS:
  - 1 YEAR CONTRACT AWARDED TO CDC, JULY 81 ($229 K)
    - COURSEWARE ● SOFTWARE ● T ___ AL LEASE
  - SSP CONTRACT AWARDED TO BATELLE SEP 81 TO DEVELOP TES ___ ___ ___ ___ ___ (S10 K)
  - CONTRACTS FUNDED BY TDI

- PLANNED ACTIONS:
  - DEVELOP COURSEWARE & SOFTWARE   (2ND QTR, FY 82)
  - DEVELOP TEST & EVALUATION PLAN   (2ND QTR, FY 82)
  - AWARD SSP CONTRACT TO CONDUCT EVALUATION   (3RD QTR, FY 82)
  - CONDUCT TEST & EVALUATE   (4TH QTR, FY 82)
  - PROJECT COMPLETION DATE   (4TH QTR, FY 82)

CBI PLATO APPLICATION CDC MICRO PLATO

SYSTEM (STAND ALONE).

CBI PLATO APPLICATION. CDC PLATO 5 SYSTEM.
APPLICATION: ARMY STUDENT INTERFACE WITH
CDC BSEP.

300

CBI PLATO APPLICATION SHOWING A 2-D
SIMULATOR WITH A 3-D SIMULATOR IN THE
BACKGROUND. AMERICAN AIRLINES 747
NAVIGATIONAL TRAINING.

COMMAND AND CONTROL (C2) CAI/TWO DIMENSIONAL (2D) SIMULATION

● DETERMINE THE TRAINING AND COST EFFECTIVENESS OF USING INTERACTIVE MICROCOMPUTER SYSTEM TO DELIVER CAI COURSEWARE TO MOS 16H10 OSUT STUDENTS (AN/TSQ-73 CONSOLE OPERATION. FOLLOW-ON EFFORT WILL MERGE MICROCOMPUTER AND VIDEODISC TECHNOLOGY TO PRESENT CAI/2D SIMULATION MAINTENANCE TRAINING MATERIALS.

● PARTICIPANTS:
   - AIR DEFENSE SCHOOL   - ACTO   - TDI

● COMPLETED ACTIONS:
   - CAI MODULE DEVELOPED BY AIR DEFENSE SCHOOL (OCT 81)
   - RECEIVED FIVE VIDEODISC PLAYERS (OCT 81)
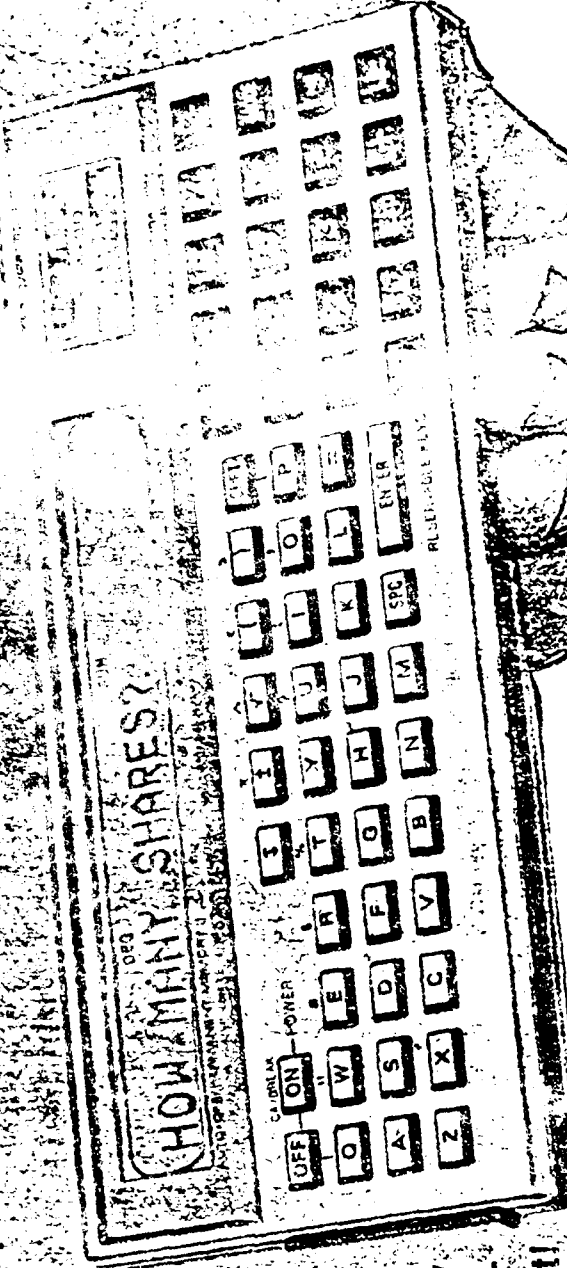   - RESEARCH EVALUATOR (SSP) CONTRACT AWARDED (OCT 81)

● PLANNED ACTIONS:
   - TEST & EVALUATION PLAN TO BE COMPLETE (2ND QTR, FY 82)
   - CONDUCT EVALUATION OF CAI MODULE   (2ND & 3RD QTRS, FY 82)
   - FINAL REPORT DUE (3RD QTR, FY 82)
   - BEGIN DEVELOPMENT OF 2D SIMULATION COURSE MATERIALS (3RD QTR, FY 82)

302

HAND HELD COMPUTER PROJECT

- PURPOSE:

  CONDUCT A SURVEY OF THE HAND HELD COMPUTER (HHC) MARKET TO DETERMINE FEASIBILITY OF USING HHC'S IN TRAINING FOR TRADOC WIDE APPLICATION AREAS OF PROBLEM SOLVING/TROUBLE-SHOOTING USING SELECTED MOS COURSES AT THE ORDNANCE SCHOOL, APG, MD.

- PARTICIPANTS:

  - ORDNANCE SCHOOL   -   TDI

- COMPLETED ACTIONS:

  - TDI STATEMENT OF WORK SUBMITTED TO ARMY RESEARCH OFFICE
  - TDI CONTRACTED SSP EVALUATORS (4TH QTR, FY 81)
  - ONSITE WITH SSP RESEARCH EVALUATORS (1ST QTR, FY 82)
  - HHC SURVEY COMPLETED (1ST QTR, FY 82)
  - HHC SURVEY REPORT COMPLETED (1ST QTR, FY 82)

- PLANNED ACTIONS:

  - MOS SURVEY REPORT BY 2ND QTR, FY 82
  - FINAL REPORT (2ND QTR, FY 82)

SHARED APPLIED TRAINING TECHNOLOGY INFORMATION SYSTEM (SATTIS)

PURPOSE:

- PROVIDE A MEANS OF SHARING PERTINENT INFORMATION ON THE APPLICATION OF
  TECHNOLOGY TO TRAINING AMONG SCHOOLS, ATC, TRADOC ACTIVITIES BY COLLECTING,
  INDEXING, AND DISTRIBUTING DATA PERTAINING TO TRAINING TECHNOLOGY APPLICATIONS.

ACTION COMPLETED:

- DRAFT SURVEY PREPARED

PLANNED ACTIONS:

- PRINT SURVEY FORMS
- DISTRIBUTE SURVEY TO TRADOC SCHOOLS & ATC
- COLLECT AND PREPARE DATA FOR COMPUTER ANALYSIS
- COORDINATE PROCESSING WITH AMO, ATSC, FT EUSTIS
- PREPARE AND PRINT REPORT
- DISTRIBUTE SATTIS REPORT TO TRAINING COMMUNITY

TRAINING DEVELOPMENTS ORGANIZATION MODEL (TDOM)

- **PURPOSE:**
  CONDUCT AN IN-DEPTH STUDY OF TRADOC SCHOOL TRAINING DEVELOPMENT ORGANIZATION, PRODUCTS, WORKFLOW, VS REQUIREMENTS AND RESOURCES TO PROVIDE A PROGRAM TO DETAIL AND IMPLEMENT MODERN METHODS AND TECHNOLOGY TO MORE EFFECTIVELY MEET MISSION REQUIREMENTS IN THE CURRENT RESOURCE CONSTRAINED ENVIRONMENT

- **PARTICIPANTS:**
  - ARMOR SCHOOL   -   INFANTRY SCHOOL   -   MISSILE & MUNITIONS SCHOOL
                         -    TDI

- **PRODUCTS:**
  - CURRENT TRAINING DEVELOPMENTS ANALYSIS
    - ORGANIZATION ANALYSIS   ● INPUTS   VS   OUTPUTS   ●   WORKFLOW ANALYSIS
  - ORGANIZATION MODEL
    - PARTICIPATING SCHOOLS WILL BE BASELINE
    - MODEL WILL USE ONLY CURRENT RESOURCES
    - ANTICIPATED MODEL GAINS

- **APPLIED MODERN TECHNOLOGIES/METHODS MODEL**
  - INTEGRATED AUTOMATED TRAINING DEVELOPMENTS PROCESS
  - PRIORITIZED IMPLEMENTATION "ROAD MAP"
  - ASSUME DIFFERENT PERSONNEL SKILL MIX, NO ADDITIONAL PERSONNEL
  - ANTICIPATED MODEL GAINS BY INCREMENT

PHOTO OF

CONSUMER MODEL

VIDEODISC PLAYER

VIDEODISC TRAINING DELIVERY SYSTEMS

● PURPOSE:

- TEST AND EVALUATE THE CONSUMER MODEL VIDEODISC PLAYER AS A TRAINING DELIVERY SYSTEM IN A MILITARY SCHOOL ENVIRONMENT

- DEVELOP A HANDBOOK BASED ON LESSONS LEARNED IN DEVELOPING FOR VIDEODISC

● PARTICIPANTS:

- ACTO - TECHNICAL SPONSOR

- USAFAS - TEST SCHOOL

- USASIGS - MOS PROPONENT

VIDEODISC TRAINING DELIVERY SYSTEM

● COMPLETED ACTIONS:

- TEST AND EVALUATION PLAN DEVELOPED BY SSP

- OBTAINED VIDEO MONITORS

- AWARDED VIDEODISC PLAYERS, MAINTENANCE TRAINING AND DISC MASTERING
  AND REPLICATION CONTRACT

- AWARDED COURSE DEVELOPMENT CONTRACT

- COURSE DEVELOPMENT CONTRACT COMPLETION - AUG 81

● PLANNED ACTIONS:

- DISC MASTERING/REPLICATION - NOV 81

- TEST - JUN 82 - AUG 82

- FINAL REPORT - SEP 82

PHOTO OF

INTERACTIVE VIDEODISC/MICROCOMPUTER

DELIVERY SYSTEM

ELECTRONIC INDEPENDENT TRAINING SYSTEM

- **PURPOSE:**

    - TEST AND EVALUATE THE USE OF INTERACTIVE MICROPROCESSOR/
      VIDEODISC TECHNOLOGY IN TWO DIMENSIONAL TRAINING DELIVERY
      SYSTEM

- **CO-PARTICIPANTS:**

    - ACTO, TECHNICAL SPONSOR

    - USASIGS, TEST ORGANIZATION

- **REPORT - BEING PREPARED FOR DISTRIBUTION**

- **RESULTS:**

    - EQUALLY TRAINING EFFECTIVENESS

    - SUBSTANTIALLY LOWER EQUIPMENT COSTS

PHOTO OF STUDENT WORKING THE AN/FCC-98 MULTIP̲L̲

312

PHOTO OF THE VIDEODISC/MICROCOMPUTER 2-D SIMULATOR
SYSTEM FOR THE AN/FCC-98 MULTIPLEXER.

PHOTO OF STUDENT WORKING WITH THE 2-D SYSTEM.

EQUIPMENT INDEPENDENT MAINTENANCE TRAINING PROGRAM (EIMTP)

● PURPOSE:

EXAMINE THE FEASIBILITY OF USING INTERACTIVE VIDEODISC/MICROCOMPUTER DELIVERY SYSTEMS
TO PROVIDE INTERACTIVE, PART TASK TRAINING FOR TEACHING MAINTENANCE OF THE MOS 26Y10

● PARTICIPANTS:

- SIGNAL CENTER & SCHOOL   -   ACTO   -   TBI

● COMPLETED ACTIONS:

- CONTRACT AWARDED SSP TO DEVELOP TEST AND EVALUATION PLAN   (4TH QTR, FY 81)

- TEST AND EVALUATION PLAN DELIVERED   (1 QTR, FY 82)

- BASELINE DATA COLLECTION COMPLETED   (1 QTR, FY 82)

● PLANNED ACTIONS:

- ACTO FUNDING PROVIDED FOR FOUR VIDEODISC/MICROCOMPUTER DELIVERY SYSTEMS   (1 QTR, FY 82)

- MASTER VIDEODISC/DEVELOP COMPUTER SOFTWARE   (1ST QTR, FY 82)

- SSP CONDUCT TEST/PREPARE FINAL REPORT   (2ND QTR, FY 82)

- PROJECTED COMPLETION DATE   (2ND QTR, FY 82)

VIDEODISC INTERPERSONAL SKILLS, TRAINING AND ASSESSMENT (ISTA)

● PURPOSE:

- EXAMINE THE FEASIBILITY OF USING VIDEODISC/MICROCOMPUTER TO PROVIDE INTERACTIVE, UNSTRUCTURED SCENARIOS TO TRAIN SENIOR NCO'S AND JUNIOR OFFICERS IN DEALING WITH SUBORDINATE PERSONNEL

● PARTICIPANTS:

- INFANTRY SCHOOL   -   ARI FIELD OFFICE   -   TDI

● COMPLETED ACTIONS:

- ARI CONTRACT AWARDED TO LITTON-MELLOINCS SEP 80, TO PROVIDE SOFTWARE/COURSEWARE

- TDI FUNDING PROVIDED TO ARI   ($195K)

- ACTO FUNDING PROVIDED FOR:

    ● 3 INTERACTIVE VIDEODISC/MICROCOMPUTER DELIVERY SYSTEM

    ● VIDEODISC MASTERING/REPRODUCTION FY 81

● PLANNED ACTIONS:

- DEVELOPMENT OF 9 SCENARIOS. DUE 2ND QTR, FY 82

- MASTER VIDEODISC/DEVELOP COMPUTER SOFTWARE   (2ND QTR, FY 82)

- CONDUCT TEST/PREPARE REPORT   (3RD QTR, FY 82)

- PROJECT COMPLETION DATE   (3RD QTR, FY 82)

VIDEODISC INTERPERSONAL SKILLS TRAINING & ASSESSMENT

SCENARIO TOPICS

1. VERBAL ABUSE

2. TAKING CHARGE

3. NCO RESPONSIBILITIES

4. PERFORMANCE COUNSELING AN NCO

5. INSUBORDINATION

6. CRISIS REFERRALS

7. COUNSELING ABOUT EER

8. "SHORTS" AND REFERRALS

ARMOR VIDEODISC TARGET ACQUISITION (VITA) PROJECT

- PURPOSE:
  - DEVELOP AND EVALUATE AN INTERACTIVE VIDEODISC/MICROCOMPUTER DELIVERY SYSTEM FOR
    TARGET ACQUISITION TRAINING FOR INITIAL OR SUSTAINMENT TRAINING FOR ARMOR CREWS
    OR INDIVIDUALS

- PARTICIPANTS:
  - ARMOR SCHOOL   - ACTO   - NIGHT VISION AND ELECTRO-OPTIC LAB
  - CAC   - ARI*   - TDI

- COMPLETED ACTIONS:
  - GSA CONTRACT FOR ADP SOFTWARE SUPPORT AT ARMOR SCHOOL FOR VITA (TDI, FY 81)
  - DESIGN/DEVELOP 5 MODULES AND LINEAR STORYBOARDS COMPLETED BY ARMOR SCHOOL, SEP 81
  - PROCUREMENT OF 20 VIDEODISC PLAYERS $53.5K (TDI, FY 81)

- PLANNED ACTIONS:
  - DESIGN/DEVELOP 1 MODULE AND LINEAR STORYBOARDS FOR INFRARED NIGHT SIGHT (2ND QTR, FY 82)
  - VIDEO PRODUCTION (2ND QTR, FY 82)
  - PROCURE HARDWARE (3RD QTR, FY 82)
  - VIDEODISC MASTER (3RD QTR, FY 82)
  - TEST AND EVALUATION (3RD QTR, FY 82)

*TO BE DETERMINED

DISTRIBUTED INSTRUCTIONAL SYSTEM (DIS)

● PURPOSE:

- INVESTIGATE THE APPLICATION OF VIDEODISC/COMPUTER TECHNOLOGY IN DR JOB SITE
  AND MAINTENANCE LEVEL TRAINING IN THE I-HAWK FIRE CONTROL MAINTENANCE COURSE
  (MOS 24E10)

● PARTICIPANTS:

- AIR DEFENSE SCHOOL   -   ACTO   -   TDI

● COMPLETED ACTIONS:

- DARPA THREE PHASE PROJECT AWARDED TO WICAT, INC., FY 79
- DARPA TERMINATED CONTRACT AFTER PHASE II   ($900K)
- COURSEWARE/EVALUATION (PHASE III) AWARDED TO WICAT, INC. FOR $358.8K   (TDI FY 81)
- COURSEWARE DEVELOPMENT COMPLETED AUG 81
- OPERATIONAL EVALUATION COMPLETED AUG 81
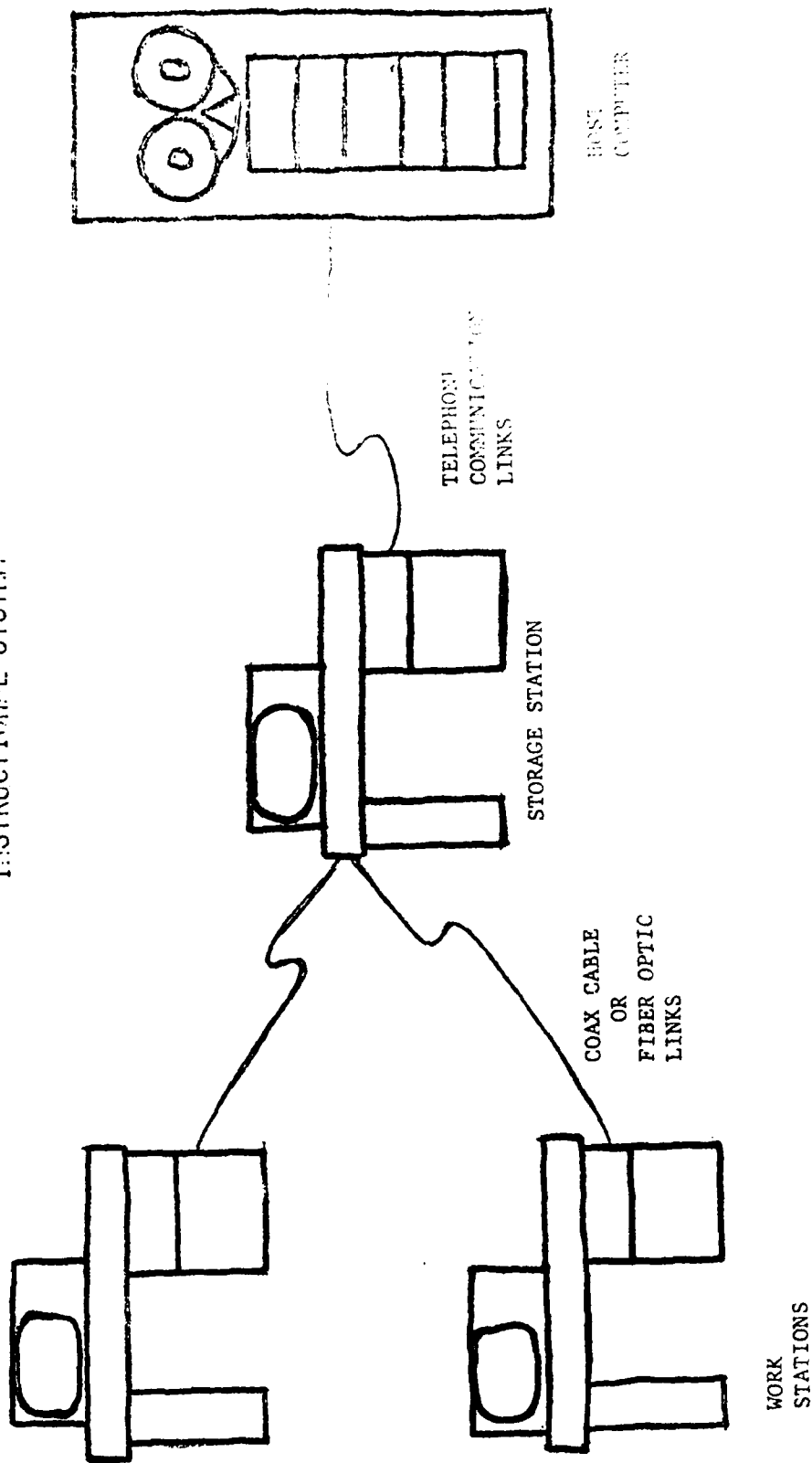- PRODUCTION/MASTERING OF COURSEWARE/2D SIMULATION   (NOV 81)

● PLANNED ACTIONS:

- DEBUG/TEST/INSTALL COURSEWARE/2D SIMULATION   (2ND ATR, FY 82)
- EVALUATION OF TOTAL SYSTEM   (2ND, FY 82)
- FINAL REPORT   (3RD QTR, FY 82)

PHOTO OF THE WORK STATION OF THE
DISTRIBUTED INSTRUCTIONAL SYSTEM
(DIS) WHICH INCLUDES DISCOVISION
VIDEODISC PLAYER, FLOPPY DISC,
WICA1 MICROPROCESSOR, SONY MONITOR
AND KEYBOARD.

PHOTO OF WICAT STORE STATION
INCLUDES WICAT MICROCOMPUTER
WITH WINCHESTER DISC AND TV
MONITOR AND KEYBOARD, AND
VIDEODISC PLAYER.

STRUCTURE OF THE WICAT DISTRIBUTED
INSTRUCTIONAL SYSTEM

HOST
COMPUTER

TELEPHONE
COMMUNICATION
LINKS

STORAGE STATION

COAX CABLE
OR
FIBER OPTIC
LINKS

WORK
STATIONS

MINEFIELD BREACHING BATTLEDRILL EVALUATION (? ?)

● PURPOSE:

- CONDUCT AN OPERATIONAL TEST AND EVALUATION OF AN INTERACTIVE VIDEODISC/
  MICROCOMPUTER SYSTEM TO DETERMINE THE TRAINING EFFECTIVENESS OF SIMULATION
  AND GAMING FOR MINEFIELD BREACHING EXERCISES.

● PARTICIPANTS:

- USAES, FT BELVOIR, VA   -   ACTO   -   TDI

● PLANNED ACTIONS:

- USAES, PREPARE MILESTONE SCHEDULE AND SPECIFICATIONS
- USAES, DEVELOP COURSE MANAGEMENT PLAN
- USAES, DEVELOP TRAINING MATERIALS
- ACTO FUND AND PROCURE DELIVERY SYSTEM HARDWARE
- TDI FUND AND PROCURE GSA SOFTWARE PROGRAMING SERVICE TO DEVELOP A
- TDI FUND AND PROCURE SSP CONTRACT FOR A RESEARCH EVALUATOR TO
  TEST AND EVALUATION PLAN
- USAES, CONDUCT TEST
- TDI FUND AND PROCURE, THROUGH SSP CONTRACT, FOR A RESEARCH EVALUATOR TO
  PERFORM EVALUATION & PREPARE THE FINAL REPORT

COUNTERFIRE DEPARTMENT TECHNICAL REPORT

● PURPOSE:

- CONDUCT AN IN-DEPTH EVALUATION OF THE COUNTERFIRE DEPARTMENT (CFD) AT
  FORT SILL, OK TO DETERMINE WHICH AREAS WOULD BEST BE SUITED TO APPLY
  TECHNOLOGY TO TRAINING.

● PARTICIPANTS:

- FIELD ARTILLERY SCHOOL   -   TDI

● COMPLETED ACTIONS:

- CONTRACT AWARDED TO OPERATIONAL MEDIA SERVICES (OMS) AS SSP 4TH QTR, FY 81.
- INITIAL DATA COLLECTION COMPLETED 1ST QTR, FY 82.

● PLANNED ACTIONS:

- IN-DEPTH ANALYSIS OF CFD COURSES 2ND QTR, FY 82.
- PREPARATION OF FINAL REPORT 2ND QTR, FY 82.
- PROJECT DUE TO BE COMPLETED MARCH 82.

PROJECTED TRAINING TECHNOLOGY EFFORTS

- FT BENNING, GA - MILITARY OPERATION IN URBAN TERRAIN (MOUT) & LAND
                     NAVAGATION EXERCISES FOR OFFICER TRAINING

- FT GORDON, GA - EXPANSION OF MOS 26Y10 - MODEL COURSE FOR VIDEODISC
                     APPLICATIONS

                  - OTHER SELECTED MICROCOMPUTER VIDEODISC APPLICATIONS

                     - REES SIMULATOR - PART TASK TRAINER
                     - AUTOMATIC SWITCH - AN/TCC-39
                     - FIELD AUTOMATIC SWITCH - AN/TTC-41
                     - AUTODIN SWITCH
                     - SATELLITE CONTROLLER COURSE

- FT SILL, OK - COUNTERFIRE DEPARTMENT

                     - TARGETING
                     - MAP READING
                     - REMOTELY PILOTED VEHICLE (RPV)

APPLICATIONS TO BE EVALUATED

● TRI-SERVICE CBI INVOLVEMENT

    - PROTOTYPE 2ND GENERATION CBI SYSTEM DEVELOPMENT

● TECHNOLOGY ENHANCED TRADOC SCHOOL

    - STAND-A-LONE INTELLIGENT DELIVERY SYSTEM

    - 2 "D" GENERIC DELIVERY SYSTEM

    - ARTIFICIAL INTELLIGENCE FOR MAINTENANCE TRAINING

    - COURSE DEVELOPMENT SYSTEM

    - ADVANCED AUDIO/VISUAL DELIVERY SYSTEMS

● CONTINUED SUPPORT OF ACTO PROGRAMS

    - VIDEODISC APPLICATIONS FOR TRAINING PROGRAMS

    - ENHANCED VIDEODISC FOR MAINTENANCE TRAINING

    - COMMUNICATIVE ELECTRONIC DELIVERY AND RETRIEVAL SYSTEM

    - TEST & EVALUATIONS OF ELECTRONIC INFORMATION DELIVERY SYSTEM

    - GENERIC AUTHORING SYSTEM

    - VOICE TECHNOLOGY

328

MAINTAINING STATE-OF-THE-ART EXPERTISE

● THRU ATTENDANCE AT:

- LEARNING TECHNOLOGY INSTITUTE SEMINARS

- SEMINARS ON VIDEODISC AND MICROCOMPUTERS IN EDUCATION
  AND JOB TRAINING

- LEARNING TECHNOLOGY CONGRESS AND EXPOSITIONS

- TRADOC/DA CONTRACTING CONFERENCES AND TRAINING COURSES

- ANNUAL ADCIS CAI/CMI CONFERENCES AND WORKSHOPS

- SOCIETY FOR APPLIED LEARNING TECHNOLOGY (SALT)
  CONFERENCES/SEMINARS

- DEMONSTRATIONS/PRESENTATIONS

PARTICIPANT COMMITMENT

● RESOURCES

   – MANPOWER

   – FUNDING

   – FACILITIES

● COOPERATION

● RESPONSIBILITIES

SCHOOL RESPONSIBILITIES

- PROVIDE SME TO REVIEW CONTRACTOR'S PRODUCT

- PROVIDE COR FOR THE SOFTWARE CONTRACT

- PROVIDE TEST COURSE AND STUDENT POPULATION

- CONDUCT THE TEST AND COLLECT DATA

- PROVIDE DATA FOR THE APPLICABLE EVALUATIONS

- ASSIST IN DEVELOPMENT OF THE SOWS

TDI RESPONSIBILITIES

- DEVELOP STATEMENTS OF WORK FOR AND PROCURE THE

  - INITIAL SURVEY
  - EVALUATION PLAN AND FINAL REPORT
  - APPLICATIONS SOFTWARE
  - HARDWARE

- SERVE AS COR ON ALL CONTRACTS

- DEVELOP MOU BETWEEN THE SCHOOL AND TDI

SUMMARY

• MANY TRAINING PROBLEMS CAN BE SOLVED OR ALLEVIATED USING TRAINING TECHNOLOGY

• TDI HELPS TRADOC SCHOOLS SOLVE TRAINING PROBLEMS AND MEET TRAINING NEEDS THROUGH USE OF TRAINING TECHNOLOGY

• SCHOOLS COME TO TDI WITH SPECIFIC TRAINING NEEDS/PROBLEMS AND REQUEST FOR ASSISTANCE

333

ATTG-DOR   24 March 1982

MEMORANDUM FOR CHIEFS OF ANALYSIS SEMINAR ATTENDEES

SUBJECT: Controlling the Development and Distribution of the Training
          Support Materials

1. The importance of the issues raised in the attached message (Incl 1),
paper briefing slides (Incl 2), and memo (Incl 3) are such that they are
provided for your information.

2. We would be remiss in not doing so as the action required and date of
seminar are in conflict. Since response to the message is required by your
parent organization on 26 March and you are singularly interested in the
suggested mechanisms of paragraph 2, you may desire to contact your office
concerning the input preparation.

3 Incl   for MARK T. PILGRIM
as   LTC, AR
                                     Chief, Occupational Research and
                                     Analysis Division

Incl
27

CDR TRADOC FT MONROE VA//ATIC-AET-IO//

AIG 893

XMT CDR USATC FT DIX NJ

CDR USATC FT JACKSON SC

CDR USATCF FT LEONARD WOOD MO

CINCUSAREUR HIEDELBERG GE

*→ LTC Upton
note this was
added by TRADOC
Cmd Gp. A*

UNCLAS

QQQQ

FOR COMMANDERS/COMMANDANTS AS APPLICABLE FROM BG(P) BROWN, DCST

SUBJ CONTROLLING THE DEVELOPMENT AND DISTRIBUTION OF TRAINING SUPPORT

PRODUCTS (S 26 MAR 82) *← Gen Brown added
This Suspense*

A. MSG, ATTG-TTA, 26 FEB 82, SUBJ RESPONSIBILITY OF SCHOOL COMMAN-

DANTS FOR TRAINING IN UNITS

1. REF A DESCRIBED THE PROCESS BY WHICH COMMANDANTS MUST

DETERMINE THEIR STRATEGY FOR SUPPORTING TRAINING IN UNITS AS WELL

AS INSTITUTIONAL TRAINING. WITHIN THAT LARGER FRAMEWORK, I AM

CONVINCED THAT WE NEED TO RESOLVE THE RECURRING PROBLEM OF

CONTROLLING THE DEVELOPMENT AND DISTRIBUTION OF NUMEROUS

TRAINING SUPPORT PRODUCTS UNITS DON'T NEED OR USE. THERE ARE

DISTR:

CS (1), DCSRM (1), DCSCD (1), DCSPAL (1), DCST (6), DCST&E (1)

LTC UPTON, C, I80, ATIC-AET-IO

2240

FREDERIC J. BROWN, BG(P), DCST,4261

G.G. Hamilton, COL

UNCLASSIFIED

SEVERAL WAYS WE MIGHT BE ABLE TO DO THIS, AND I SOLICIT YOUR
THOUGHTS ON ALTERNTIVES.

2.   ONE PLACE TO START CONTROL OF THE PROCESS, IT SEEMS TO ME, IS IN
THE TRAINING DEVELOPMENT PROCESS WHICH DRIVES REQUIREMENTS FOR
TRAINING SUPPORT PRODUCTS.   POTENTIAL WAYS TO DEAL WITH THE PROBLEM,
WHICH WERE DISCUSSED AT THE RECENT TRAINING EXECUTIVES' WORKSHOP WITH
YOUR SENIOR STAFF, INCLUDE THE FOLLOWING:

    A.   FOCUS ON ELIMINATING TASKS WHICH ARE NOT COMBAT CRITICAL,
AND WHICH REPEAT STEPS AND PROCEDURES FOUND IN TECHNICAL MANUALS,
ARMY REGULATIONS OR SIMILAR PUBLICATIONS.   REVALIDATE ONLY THOSE
TASKS THAT DIRECTLY RELATE TO SUCCESS ON THE BATTLEFIELD, OR TO TROOP
SAFETY AND SURVIVAL.

    B.   WHERE APPROPRIATE, EXPRESS TASKS IN GENERAL TERMS, OR AS
STATEMENTS OF SKILLS AND KNOWLEDGE.

    C.   IMPOSE CONSTRAINTS OR "CEILINGS" ON THE NUMBER OF TASKS
INCLUDED IN AN MOS, CONSIDERING SKILL LEVEL AND THE DEGREE OF TECH-
NOLOGY ASSOICATED WITH THE MOS.   FOR EXAMPLE, THE "MARK ON THE WALL"
PRESENTED AT THE DCST WORKSHOP SUGGESTED CEILINGS OF 90, 100, AND 110
TASKS FOR LOW, MID, AND HIGH TECHNOLOGY MOS, RESPECTIVELY.

DISTR:

3. A SECOND ASPECT OF THE PROBLEM WE NEED TO EXAMINE IS HOW TO CONTROL THE FLOW OF PRODUCTS ALREADY DEVELOPED. IN SOME INSTANCES, UNITS ARE PROVIDED WITH MATERIALS WHICH ARE EXCESSIVE OR UNNEEDED, AND REMAIN UNUSED. THE FOLLOWING ARE ALTERNATIVES THAT COULD BE CONSIDERED TO RESOLVE THE PROBLEM:

A. EACH COMMANDANT-PROPONENT COULD HAVE AUTHORITY TO POLICE ALL THE ETM FROM ALL THE SCHOOLS WHICH FEED INTO "HIS" TYPE BATTALION. EACH SCHOOL HAS GOOD PRODUCTS, BUT WHEN IT ALL COMES TOGETHER IN A BATTALION, IT'S TOO MUCH.

B. ANOTHER POSSIBILITY COULD BE A REQUEST DISTRIBUTION SYSTEM WHERE TRAINING SUPPORT MATERIALS ARE DISTRIBUTED TO UNITS BASED ON DEMAND. A PILOT TEST OF THIS CONCEPT, WHICH IS UNDER CONSIDERATION, WOULD REQUIRE ACTIVE PARTICIPATION BY ONE BATTALION SIZE UNIT FROM EACH OF THE COMBAT, COMBAT SUPPORT, AND COMBAT SERVICE SUPPORT ARMS, FOR ACTIVE AND RESERVE COMPONENTS, AND PROPONENT SCHOOLS.

4. TO ASSIST IN DEVELOPING A RESPONSIVE AND REALISTIC OVERALL APROACH TO THE PRODUCT PROLIFERATION ISSUE, I SOLICIT YOUR IDEAS, OPINIONS AND RECOMMENDATIONS. CONSIDER THE IMPLICATIONS

UNCLASSIFIED

FROM CRADLE TO GRAVE. LOOK AT FRONT END ANALYSIS AND PRODUCT

DEVELOPMENT, AS WELL AS DISTRIBUTION SYSTEMS. I NEED YOUR

THOUGHTS BY 26 MARCH.

DISCIPLINING DEVELOPMENT OF TRAINING SUPPORT PRODUCTS

ONGOING ACTIONS

● LIMIT TASKS BASED ON BATTLEFIELD SUCCESS OR SAFETY

● PROPONENT SCHOOLS DETERMINE TRAINING SUPPORT FOR <u>UNITS</u>

● SUBJECT NEW REQUIREMENTS TO STRINGENT NEEDS ANALYSIS BASED ON STATED
  NEEDS OF FIELD UNITS

● EMPHASIZE SUPPORT THE TRAINER (NCO) - NOT TRAINEE

● INTENSIVE MANAGEMENT (ADP) TO INSURE INTEGRATION AND ELIMINATE
  DUPLICATION

● RECOGNIZE ROLE OF TECHNICAL MANUALS AS PRIMARY TRAINING PRODUCT FOR
  EQUIPMENT OPERATION AND MAINTENANCE

● ESTABLISH STANDARDIZED PROCEDURES FOR VALIDATION OF TRAINING SUPPORT
  TO UNITS

● EMPHASIZE APPLICATION OF NEW TECHNOLOGY (.I.E., VIDEODISC) TO REPLACE
  PAPER

ATIC-AET-10

1 0 FEB 1982

MEMORANDUM FOR BRIGADIER GENERAL (P) BROWN

SUBJECT: Reduction in the Volume of Training Support Materials

1. I share your concern over the excessive amount of training support
materials developed to support training in units. The availability of some
2,500 products for a battalion and more than 300 products for some MOS high-
lights this problem. Clearly, efforts must be initiated to insure that
commanders are provided only with those training support materials which are
absolutely essential to meet unit and individual training requirements.

2. Although the TD Scrub of extension training products achieved many
important objectives, it is evident that additional measures must be taken
to achieve further reductions in the training support inventory. It is
important, however, that we focus our actions on the underlying cause of
the proliferation problem, rather than on the products themselves, which are
only the symptoms of the problem. I am specifically suggesting that a critical
review of the Front-End Analysis (FEA) process be conducted, because it drives
the requirements for training support products. It is increasingly apparent
that in many cases, FEA efforts have missed the mark by identifying tasks that
are not critical, that repeat steps and procedures found in technical manuals
or that repeat administrative procedures defined in Army regulations. As a
result, numbers of tasks range from 50 to 600 for individual MOS. Because the
current system for developing training support is task based, it is evident
that the degree of product proliferation is directly proportional to the
length of task lists. The situation is further aggravated by the "more is
better" strategy employed during the TRADOC Review of Manpower (TRM).

3. A lasting solution is possible only if existing FEA are closely examined
to insure that tasks are, in fact, critical to mission accomplishment.
Expressing tasks generically and limiting the number of tasks by complexity of
MOS should be given serious consideration. After such an examination, all tasks
selected for training in the unit must be subjected to a stringent needs
analysis to insure that training support materials are developed only in those
cases where a product actually is required. Chapter 6 of forthcoming TRADOC
Regulation 351-1 provides such an analysis mechanism.

ATIC-AET-10
SUBJECT: Reduction in the Volume of Training Support Materials

4. The primary objective of this proposed re-examination of FEA is to insure that individual tasks are related only to success on the battlefield or to survival. To achieve this objective, the FEA re-examination should employ a top down approach whereby all individual tasks can be related to the collective FEA and to Battlefield Development Plan (BDP) functions.

5. To drastically reduce the current lengthy task lists, I propose that we place constraints on the number of tasks that can be used in defining each skill level within a MOS. This would force the proponent schools to come to grips with the problem. Such a limiting policy on MOS tasks could be portrayed as follows:
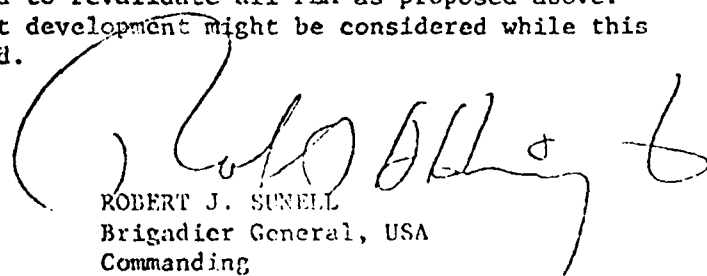
MOS Task Ceilings

SKILL LEVEL	LOW TECHNOLOGY	MID TECHNOLOGY	HIGH TECHNOLOGY
1	40	50	60
2	20	20	20
3	20	20	20
4	10	10	10
TOTAL	90	100	110

Guidance on reducing tasks to remain within the constraints shown above would include the following:

a. Eliminate those tasks that simply repeat steps and procedures found in Technical Manuals, or those that restate administrative procedures outlined in Army Regulations or similar publications.

b. Where appropriate, express tasks in generic terms or as statements of skills and knowledge. Include tasks for which other schools have proponency (shared tasks).

6. I recommend that the Training Developments Institute (TDI), in conjunction with proponent schools, be directed to revalidate all FEA as proposed above. A limited moratorium on new product development might be considered while this FEA revalidation is being conducted.

ROBERT J. SEWELL
Brigadier General, USA
Commanding

MOS TASK MATRIX

SKILL LEVEL	LOW TECHNOLOGY MOS					MID TECHNOLOGY MOS					HIGH TECHNOLOGY MOS				
	55B	76W	36C	94B	05B	63B	35M	95B	71P	93H	24U	35B	26C	24J	35F
1	78	34	65	53	41	449	121	138	58	60	153	105	58	87	55
2	6	104	34	14	12	82	60	58	18	14	64	101	3	22	40
3	48	31	28	25	NA	45	NA	14	16	19	36	28	7	21	NA
4	13	17	6	NA	NA	28	NA	32	22	16	30	15	NA	NA	NA
5	NA	9	NA	15	NA	11	NA	17	16	NA	NA	NA	NA	NA	NA
TOTAL	145	195	133	107	53	615	181	259	130	109	283	249	68	130	95

55B Ammunition Specialist
76W Petroleum Supply Sp
36C Wire System Installer/Operator
94B Food Service Sp
05B Radio Operator

63B Lt Wheel Veh & Pwr Gen Mech
35M Avionic Nav/Flt Con Equip Rep
95B Military Police
71P Flight Ops Coordinator
93H ATC Tower Operator

24U Hercules Missile Elec Rep
35B Electronic Instrument Rep
26C Cbt Area Surveillance Radar Rep
24J Improved Hawk Pulse Radar Rep
35F Nuclear Weapons Elec Spec

LOW TECH SL 1 - 54
SL 2 - 34
SL 3 - 33
SL 4 - 12
SL 5 - 12
Avg # Task Low Tech 127

MID-TECH SL 1 - 165
SL 2 - 46
SL 3 - 24
SL 4 - 25
SL 5 - 15
Avg # Task Mid-Tech 259

HIGH TECH SL 1 - 92
SL 2 - 46
SL 3 - 23
SL 4 - 23
SL 5 - NA
Avg # Task High-Tech 165

DATE
FILMED

11-82